

Air Conditioning & Refrigeration News

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Executives Tell Serval Men To 'Get Your Price'

Newcomb, Terhune, Bell,
Aulsebrook Analyze New
Commercial Markets

NEW YORK CITY—"Sell your product—not your price," was the continually recurring theme of talks before the annual sales and engineering conference of the Serval commercial refrigeration and air conditioning division, which closed Saturday, Feb. 17 at the Hotel Abbey.

E. A. Terhune, sales manager of the division, spoke every-hour-on-the-hour, and was his usual entertaining self as the master-of-ceremonies.

Harry Newcomb, general manager of the division, outlined the opportunities for 1940 as follows:

"Anyone who has taken the trouble to make conscientious study of current conditions in American industry in general, and the commercial refrigeration industry in particular, must be impressed by the fact that all reliable indicators point to 1940 as holding forth the greatest possibilities for increased sales and profits of any year since the beginning of the 'great depression'."

"There can be no doubt that a very large unsatisfied market exists. Production during the last two years has fallen far behind the normal demand brought about by natural growth of the industries that require commercial refrigeration, by the development of new applications, and by obsolescence of earlier type, inefficient refrigerating equipment."

"People in general are in a 'buying mood'—and this means a very great deal indeed to every aggressive distributor, dealer, and salesman."

At the banquet held in the main ballroom George F. Taubeneck, editor of AIR CONDITIONING & REFRIGERATION NEWS, was the principal speaker.

Leading speaker of the Saturday session was Charles Q. Sherman, president of Charles Q. Sherman Corp., who discussed the coming importance of the distributor in the commercial refrigeration field (particularly in frozen foods).

A question and answer program closed the meeting, with the Serval men answering the questions put to them by the distributors and salesmen.

Speakers during the convention included: C. L. Olin, applications manager; Paul B. Reed, service manager; W. J. Aulsebrook, assistant sales manager; Harry F. Bell, district manager; A. M. Schmitz, field engineer; and William Fogel, president of Fogel Refrigerator Co., Philadelphia. President Louis Ruthenburg missed connections and was unable to deliver his scheduled address.

As a counter-attack against "racketeering," Mr. Terhune stated that dealers should fall back on their long-established good reputation, a good product at a fair price, and a

(Concluded on Page 11, Column 1)

Charles Wilson Heads Carbondale Sales

HARRISON, N. J.—Charles E. Wilson, vice president in charge of Pacific Coast operations of Worthington Pump & Machinery Corp., has returned to the home office to direct sales of all products handled by the Carbondale division of the company, which specializes in air conditioning and refrigeration equipment.

In this work Mr. Wilson succeeds H. A. Feldbush, who henceforth will devote his time to the manufacturing department of the corporation. Mr. Wilson also is assuming charge of the sales of all products built at Worthington's Holyoke, Mass. factory.

\$5 Down, 5 Years To Pay, Basis of 1940 N. Y. Utility Drive

NEW YORK CITY—A "Triple Five" campaign on electric refrigerators and another "bargain package" drive on three selected appliances, both to start Feb. 24 with the backing of extensive local advertising, were announced last week by E. F. Jeffe, vice president of Consolidated Edison Co., to representatives of cooperating dealers.

As its name indicates, the "Triple Five" campaign is built around three "big fives"—an allowance of \$5 on old iceboxes traded in on new automatic refrigerators, a down payment of \$5 on refrigerator sales, and credit terms of five years. The approximately 900 cooperating dealers also will cut in on additional earnings through "pools" to be set up by each of the 12 distributors represented in the drive.

During March, April, and May, the refrigerator campaign will be secondary to the "package" drive on the three smaller appliances. After that time, it will hold center-stage

(Concluded on Page 2, Column 5)

Nashville Stays Out Of Appliance Selling

NASHVILLE, Tenn. — Nashville Electric Service will not compete with independent dealers in the sales of major electrical appliances during 1940, the Nashville Power Board has decided. The board ruled that dealers should be given a definite chance to meet the sales quotas set up for big appliances this year, without interference by the municipality.

Dealers have urged Nashville Electric Service to stay out of the major appliance field, one board member

(Concluded on Page 2, Column 5)

Norge Shipped 21,067 Products In January

DETROIT—January shipments of Norge home appliances this year totaled 21,067 units, an increase of 107% over the sales total for the same month last year and the best January volume since 1937, reports President Howard Blood.

January business brought the shipments of Norge products for the last five months to 98,361 units, an in-

(Concluded on Page 2, Column 3)

Kelvinator Adds To Commercial Package Units

Reach-In Cabinets and
New Beverage Coolers
Being Introduced

DETROIT—Kelvinator division of Nash-Kelvinator Corp. is introducing a new line of reach-in refrigerators and beverage coolers and making additions to its water cooling and condensing unit lines.

The new line of reach-in refrigerators consists of three models, all utilizing forced-air circulation. They are the R-20, having a 20-cu. ft. capacity; a model RI-20, which is the same as the R-20 except that an ice-maker is built in the cooling unit, and an R-30, having a 30-cu. ft. capacity.

These new commercial refrigerators are completely manufactured by Kelvinator, including cabinet, cooling unit, and condensing unit. The welded outer shell is covered with 20-gauge rustproofed sheet steel, and the front of the base is recessed to provide toe room. The cabinet exterior is finished in Permalux.

Inside of the cabinets is finished with white porcelain on steel, and the bottom has an acid-resisting porcelain finish. They have heavy angle iron bases plus frames made of kiln-dried, straight-grained spruce, cross-braced to prevent twisting and

(Concluded on Page 20, Column 1)

Peerless Takes Over Roto-Beam Sales

CHICAGO—Peerless of America, Inc. has expanded its activities in the refrigeration and air conditioning field still another step by taking over the sales of the Roto-Beam Co., a local manufacturer of electric air circulators, and converting this company into the Roto-Beam division of the Peerless organization.

Claimed to involve an entirely new principle of air circulation, the Roto-Beam unit is said to create a gentle pulsation of air not only in front of the fan but in every portion of the area in which it may be installed.

Key to the Roto-Beam's performance is a patented five-blade propeller, each blade of which converges

(Concluded on Page 2, Column 4)

Gale Extends Its Line With Six New Models

GALESBURG, Ill.—Addition of four new 8-cu. ft. household models and two low-priced "sixes" to its 1940 refrigerator line, and a downward revision of its entire refrigerator price structure for the current year has been announced by Gale Products division, Outboard, Marine & Mfg. Co.

Two of the new "eights" are in the company's "Special" series and two are in the "Deluxe" series, while both of the 6-cu. ft. models are in the "Special" line.

Price leader of the new Gale line under the lowered price schedule is a 6.56-cu. ft. model retailing at \$89.95 complete. This model is equipped with glass defrosting tray, three full-width shelves, automatic interior light, and is powered by a Gale

(Concluded on Page 2, Column 1)

Miller Heads G-E Household Sales

BRIDGEPORT, Conn.—L. H. Miller, manager of merchandising services since the consolidation of General Electric appliance activities at Bridgeport, has been appointed sales manager of the G-E household refrigerator section. He succeeds Alfred C. Sanger, who has been named manager of the heating devices and fan section.

Mr. Miller's experience with General Electric over the past 15 years has been concerned primarily with reorganization problems in the field, although he served in his new post of refrigeration sales manager briefly

(Concluded on Page 2, Column 3)

Contractor Licensing Bill Proposed In New York

ALBANY, N. Y.—A bill requiring the licensing of contractors engaged in air conditioning and providing for the inspection of systems in buildings of all classes has been introduced in the state legislature here by Senator William F. Condon, Yorkers Republican and Assemblyman Arthur Wachtel, Bronx Democrat.

State and local administrative boards would be created under terms of the proposed legislation, which was introduced in the Senate as No. 217 and in the House as No. 420.

(Concluded on Page 20, Column 3)

'39 Refrigerator Sales Total Was 2,085,000 Units

Replacements Helped
Industry To Record a
Big Gain Over '38

DETROIT—For the third time in the industry's history, yearly sales of household electric refrigerators by manufacturers to distributors and dealers last year passed the 2 million mark, the 1939 world sales of 2,085,000 (as estimated by AIR CONDITIONING & REFRIGERATION NEWS) representing a gain of 50% over the 1938 total.

World sales by members of the Refrigeration Division of National Electrical Manufacturers Association (Nema) totaled 1,980,195 units in 1939, according to the official tabulation just released by the association. The balance of the total in the estimate made by the NEWS was split among a dozen small producers who are non-members of Nema.

Sales in the U. S. alone were 1,900,000 units. According to all available information, 20% of the sales in the United States involved the replacement of a unit previously used by the same family.

On the basis of available figures, the average price of the household electric refrigerators sold in the United States in 1939 was \$169, a

(Concluded on Page 6, Column 1)

Westinghouse January Shipments—867 Cars

MANSFIELD, Ohio—January merchandise shipments from the Mansfield plant of Westinghouse totaled 867 carloads, third highest in the plant's history, reports Frank R. Kohnstamm, merchandising division sales manager. This is an increase of 25% over the 692 carloads shipped in the same month last year.

The month's shipments, which included refrigerators, ranges, water heaters, roasters, irons, and other appliances, would have filled a train eight miles long. Of the total 759 carloads were shipped by rail, and the balance by truck.

Only other months in which January's total was exceeded were March, 1937, when shipments totaled 922 carloads, and April of the same year, when the total was 905 carloads.

59 of 69 January N. Y. Jobs Are Self-Contained

NEW YORK CITY—Sixty-nine installations of air conditioning equipment in the New York City area were reported to Consolidated Edison Co. by distributors and dealers during January. Of this number, 59 were self-contained units, 42 being room coolers of 1½ hp. or less, and 17 being store coolers of 2-hp. capacity and up.

Offices led the business list in

(Concluded on Page 2, Column 4)

No Matter What They Say, It's 'War' To This Dealer

RACINE, Wis.—"The war is on!" So advertised Porter's, local appliance and furniture store, in announcing the 1940 "special" 6-cu. ft. Frigidaire unit at \$114.75.

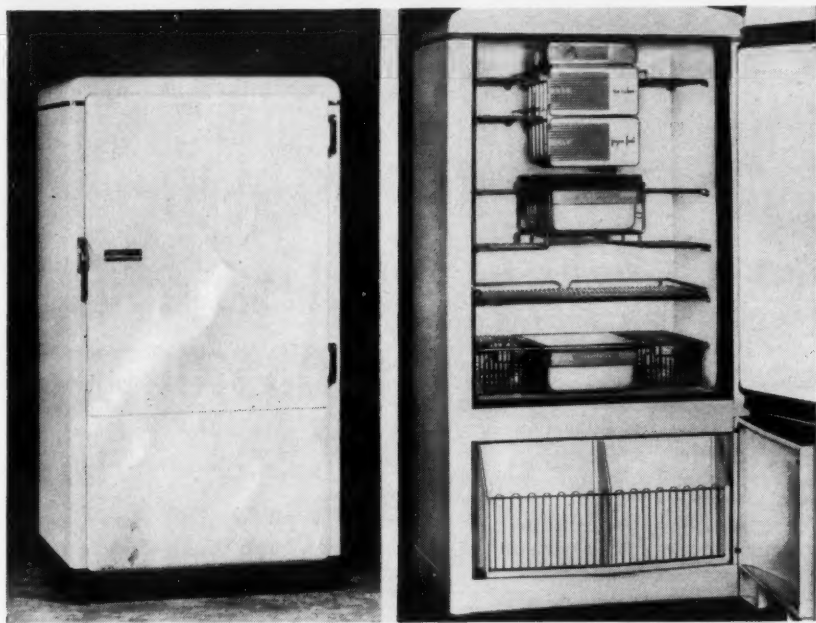
"Not a war of nations; not a war of bullets, airplanes, or warships; not a war of monarchs, but a price war. A refrigerator price war," the advertisement shouted. "It's your—once in a lifetime—opportunity to cash in! Values never before thought possible. It can't last long. Buy now and save."

York's Newest Product: A Flaklce Machine



R. E. Miller (lifting top panel), manager of the industrial refrigeration division of the York Ice Machinery Corp., demonstrates the Flaklce "Cold Magic" machine to York distributors at the recent York convention in New York City. This machine turns out ice ribbons for commercial purposes.

Some Added Starters



Left: exterior of Gale \$89.95 'Special.' Right: new Gale Deluxe 8-ft. model.

6 New Special Boxes Added To Gale Line

(Concluded from Page 1, Column 4)
"mechanical iceberg" unit carrying a five-year parts warranty. Like all Gale refrigerators it has acid-resisting porcelain interior and Bonderized Dulux exterior.

Companion model of this leader is a 6.5-cu. ft. box with special deluxe interior equipment and intended to retail at \$119.50. This job is equipped with a defrosting tray, glass covered sliding porcelain hydrator, plastic trimmed evaporator door, and light.

The two Deluxe eights (which actually have a capacity of 8.8-cu. ft. and shelf area of 18.35 sq. ft.) are of streamlined design with curving top, chrome-plated ventilating louvers, and crown door. Hardware is inlaid with white striping. Convenience features include meat keepers, hydrators, fruit containers, sliding shelves, and vegetable bins.

The Special eights have the same

capacity and shelf area as their Deluxe mates, but lack many of the extra gadgets. They are finished in white Dulux with black base.

Both 8-footers have twin freezing units with separate doors. These units have three fast freezing shelves and a separate frozen food storage compartment.

The new Gale "Kit Plan" applies to all new models as well as to the regular line. There is actually one Deluxe and one Special cabinet with two interior "Kits" for each. These kits are comprised of all equipment for the food compartments, including ice cube trays and shelves. The higher priced kits, of course, offer all the extra accessories such as meat keepers, sliding shelves, hydrators, thermometer, and fruit and vegetable bins.

Gale now offers a complete line of eight cabinets, ranging in capacity from 4 to 8 cu. ft., in both Special and Deluxe series. This means that with the Gale Kit Plan dealers have a selection of 18 models, plus a 13.5-cu. ft. household model for extra large families and a 16 and 19.5-cu. ft. job for stores and restaurants.

Miller Directs Sales Of G-E Refrigerator

(Concluded from Page 1, Column 4)
on one other occasion, slightly more than a year ago.

Previously he had been a refrigeration dealer, in 1925 and subsequently an officer or manager of many distributing units, in Louisville, Cleveland, Harrisburg, Allentown, and elsewhere. In his new sales activity he will be responsible to A. M. Sweeney, manager of G-E's household refrigerator section.

Activities which formerly were a part of the merchandising services section under Mr. Miller have been redistributed. The retail development and sales education sections, operation of the new G-E Institute, and the home service section have been made a part of the advertising division, under direction of Boyd W. Bullock, advertising manager.

The G-E Home Bureau, and appliance sales activities in connection with utility companies, department stores, apartment houses, rural programs, and employee sales will be supervised by C. M. Snyder, assistant manager of the appliance and merchandise department.

Mr. Sanger, prior to his appointment as refrigeration sales manager, had for six years been G-E district appliance sales manager in Philadelphia, and previously had been a retail refrigerator salesman, manager of a wholesale operation, and radio specialist. He headed G-E's first district appliance sales office.

Westinghouse Gets Pittsburgh Contract

PITTSBURGH—Contract for 3,073 Westinghouse refrigerators to be installed in three low-cost housing projects has been made between the Housing Authority of the City of Pittsburgh and Westinghouse.

The refrigerators will be installed in the Bedford Dwellings, Terrace Village Unit 1, and Terrace Village Unit 2. They were purchased on what is known as an evaluated basis, a combination of unit price and guaranteed current consumption for a 10-year period.

Norge Shipments Show Big January Increase

(Concluded from Page 1, Column 2)
crease of 48% over the 66,424 units shipped in the same period of the preceding year.

Although all divisions of the company contributed toward the improvement, Mr. Blood said, the commercial refrigeration division led the jump in volume with an increase of 267% over sales for January of 1939.

Current factory production has been stepped up to meet an expected increase of between 22 and 23% in February over the January figure, the Norge president said. Field acceptance of the four new models recently introduced has been good, he declared. These include a 6-cu. ft. special model at \$112.75 f.o.b. factory, an 8-cu. ft. job at \$179.95, and an all-porcelain six at \$159.95.

Peerless Arranges To Sell 'Roto-Beam'

(Concluded from Page 1, Column 3)
to a conical-shaped point at the center. This center is said to produce a high-velocity revolving beam of air which is directed horizontally from the center of the propeller.

Tips of the blade set up another revolving air beam, it is explained, which is larger in diameter but revolves more slowly than the center beam. Between these two beams a partial vacuum is produced.

Action of the two beams causes all of the air in the room to move in harmony with the beams, it is claimed, air from the ceiling being drawn down to the center beam, and air on the floor moving up to the beam.

The propeller of this new fan is made of highly polished aluminum alloy, not stamped from sheet metal. This is done to minimize the danger of its being bent out of shape.

There are 32 different models of the Roto-Beam, including desk, pedestal, and wall type, to cover a variety of applications ranging from home to factory. There also is a complete line of Roto-Beam exhaust units.

Peerless plans to distribute the Roto-Beam circulators through its regular refrigeration and air conditioning channels, and to sell them for use not only in all types of air conditioning systems but also to improve circulation in various types of refrigerators and to aid air movement in locker storage installations.

2,500-Foot Plant Houses 'Zero Pad' Department

CHICAGO—A 2,500 sq. ft. addition to its Chicago factory has just been completed by Peerless of America, Inc. to house the company's "Zero Pad" (cold plate) department.

The plant addition includes thousands of dollars worth of seam welders, sand blasters, metalizing equipment, sheet metal shearing and leveling machinery, and other equipment needed to manufacture these Zero Pads.

Self-Contained Coolers Dominate N. Y. Sales

(Concluded from Page 1, Column 5)
January installations, 12 such jobs being reported, while nine showroom jobs were next in line, followed by seven installations in retail stores and four each in theaters and doctors' offices. Residential installations totaled 14 for the month.

Residential	14
Bank	1
Barber and Beauty Shop	1
Hospital—Laboratory	1
Hotel Guest Room	1
Office Building	1
Doctors' Offices	4
Misc. Offices	12
Restaurants	2
Showrooms	9
Department Stores	2
Retail Stores	7
Theaters	4
Misc. Commercial	9
Candy Mfg.	1
Total	69

Consolidated Edison Has 2 New Plans

(Concluded from Page 1, Column 2)
and be the subject of major attention and promotional efforts.

Refrigerators to be included in the drive are: Crosley, Electrolux, Frigidaire, General Electric, Gibson, Hotpoint, Kelvinator and Leonard, Norge, Philco, Stewart-Warner, and Westinghouse. Distributors have agreed to file prices for the utility's territory under New York price maintenance agreements.

The package-appliance drive will include the new General Electric deluxe tank type vacuum cleaner, the Artistic six-way floor lamp, and the Proctor electric iron. Under arrangements with the three manufacturers, the appliances will be offered in combination as a "bargain-plus."

Regularly listed at \$62.50 with a \$10 trade-in allowance on the old cleaner, the G-E vacuum will be offered during the drive for \$36 cash, plus the old cleaner. Deferred payment price will be \$2.45 down, including sales tax, and \$2.45 a month for 15 months.

According to the "special purchase privilege" available only to users of Consolidated Edison current, purchasers of the vacuum cleaner at the special price also may purchase the floor lamp, which lists regularly at \$21.90, for \$2.95, complete with shade and bulbs. The iron also may be purchased for an additional \$1.95. List price of this item is regularly \$12.50.

Only requirement is that the lamp and iron be purchased at the same time as the cleaner. If the customer wishes either lamp or iron, but not both, he may purchase it under this arrangement at the campaign price. These additional items may be carried on the vacuum cleaner terms at the rate of \$2.45 for an additional two months.

Campaign prices of the "package" specials will be filed under fair trade agreements to be in effect during the duration of the drive, Mr. Jeffe said. After that time the standard list prices will be re-established.

Nashville Won't Compete With Dealers This Year

(Concluded from Page 1, Column 2)
reported, and it is now up to them to prove their claims that they can meet the quota of volume to be decided upon.

No threat was made by the power board to enter the major appliance sales field after this year, but it was considered likely that, if independent dealers were unable to sell enough appliances to build up power consumption to the point considered necessary for profitable operation, there would be no alternative but for the city to go into the business itself.

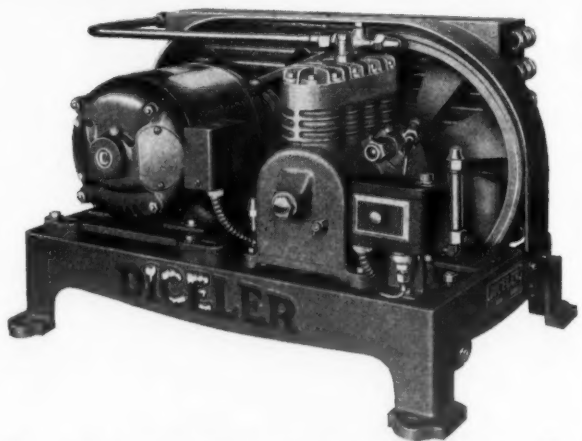
Action of the board bars major appliance sales by the city this year, but does not restrict the sales of small appliances, such as irons, lamps, and light bulbs, small heaters, and other small electrical accessories. Such products, it was said, will continue to be displayed and sold by the municipality.

Although no definite action was taken by the board regarding the continuance of its sales promotional expenditures on behalf of dealers, the understanding was that the overall promotional budget would be cut considerably, leaving the advertising budget about the same as it is now but trimming on other promotion.

DICELER 4 CYL.

1/6 H.P.
To
30 H.P.

AIR AND
WATER
COOLED



IT HAS EVERYTHING+

From bottom of base to top of condenser, every detail of a DICELER Condensing Unit has a very definite reason for the way it is constructed. New materials are constantly tested to determine if there is something better. At the right are listed some of the basic features which make DICELER the outstanding condensing unit in the commercial refrigeration field today. For design, construction and service the most is offered by DICELER.

Over a sixth of a century of making compressors for refrigeration gives us an experience that is invaluable in the manufacture of refrigeration condensing units. Get the whole story on DICELER units and learn why DICELER is easier to sell and keep sold.

Write for our new catalogue. Some valuable territory still open.

DEISSLER MACHINE CO.
GREENVILLE, PA.

PIONEER OF FOUR CYLINDER REFRIGERATION

4 CYL. COMPRESSOR
Diceler was first to built four cylinder compressors for refrigeration. This construction affords better balance and even distribution of load, due to overlapping compression impulses.

REFRIGERANT AND OIL LEVEL INDICATORS
Provide accurate indication of correct refrigerant liquid level in receiver and oil level in crankcase at all times.

PURGE VALVE IN RECEIVER
Permits purging air from system at point where it traps in top of receiver.

BALANCED SHAFT SEAL
Provides the same pressure on seal face regardless of crankcase pressure. Resulting in perfect seal and long life.

ONE PIECE CYLINDER BLOCK
Assures accurate alignment of cylinders with crankshaft. Made of electric furnace nickel iron.

OVERSIZED CONDENSERS
Multipass full length condensers properly shrouded to direct full flow of air through entire finned surface on air cooled models.

EXPORT DEPT.
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Marked Men

• Every Ansul cylinder is a "marked man." For every Ansul cylinder is individually analyzed—a written guarantee to you that Ansul refrigerants are just what we say they are—pure, clean, dry.

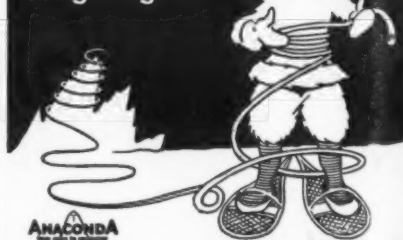
ANSUL SULPHUR DIOXIDE METHYL CHLORIDE

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THE JOBBER WHO WORKS FOR ANSUL WORKS FOR YOU

Anaconda Copper Refrigeration Tubes

Unusually long lengths!



THE AMERICAN BRASS CO.
FRENCH SMALL TUBE BRANCH
General Offices: Waterbury, Conn.

Hustling Small-Town Man-&-Wife Team Show 'City Slickers' How It's Done In Winning G-E's Home Laundry Contest

MINERVA, Ohio — Ed Larson, hard-working appliance dealer here whose entire staff consists of himself and his wife, has turned up as the grand national winner in General Electric's "Committee of 1,000" drive to sell home laundry equipment. He will head a group of 999 other retail salesmen whose advice on selling methods will be sought and used by the company from now on.

The campaign, which ran last fall, had a dual objective—to sell washers and ironers, and to gather tested selling methods from the leaders of the drive. A thousand prizes were offered the winners. For heading the list, Mr. Larson was awarded a new Pontiac sedan.

Seven other top winners in the contest were:

Robert Erikson, of Lynn Gas & Electric Co., Lynn, Mass.; L. E. Merkle, of Kloeppers, Bucyrus, Ohio; Henry Marigoni, Chalot Electric Co., Uhrichsville, Ohio; I. F. Persky, Public Service Gas & Electric Appliances, New York City; E. A. Dorne, of Joseph F. Lederer, Inc., Bridgeport, Conn.; Oscar Mannen, of Oscar's, Hazelton, Pa.; and E. Smith, of J. P. Smith, Barberton, Ohio.

To start the year off right for the Committee of 1,000, General Electric has already issued a preliminary questionnaire to round up the most effective methods of selling washers, ironers, and dryers. The answers will be used to develop merchandising plans for all salesmen.

HELPFUL MATE

Mr. Larson's story might well be studied by all salesmen. Two years ago he and his family began the appliance business in Minerva, a town of about 3,000 inhabitants, moving into a small store with an apartment on the second floor. He does all of his own selling and servicing, while Mrs. Larson takes care of the two children, runs the household, does the bookkeeping, and waits on customers when the boss is out on a call.

Last spring he and his wife went into Cleveland to see General Electric's traveling dramatic presentation "Get Over Into Clover," which was designed to sell the advantages

of complete line operation to dealers. Ever since then they have handled G-E home laundry equipment, refrigerators, ranges, radios, vacuum cleaners, and small appliances.

When the "1,000 campaign" was announced, Mr. Larson went to bat in earnest. His plan was simple, but complete. First he decided he would work 16 hours a day during the campaign. He would employ the user coupon book supplied by General Electric. He would study the product closely. He would advertise consistently in the classified section of the local paper, emphasizing terms.

One of the most important factors was the user coupon book, and Mr. Larson assigned two of his present washer owners to a local pottery plant, giving them exclusive right to turn in leads from this local industry. Another owner was given the railroad shops. In fact, he talked to all of the local user-owners, and had them all soliciting business.

FULL-TIME WORKER

The leads came in so fast that he often worked until after midnight closing washer sales. An important factor, in Mr. Larson's opinion, was that he paid off for leads turned in immediately after the sale was closed.

All of his sales were made within a radius of 15 miles. While he was "resting," he would often put a washer in this truck and canvass some of the new electrically equipped farms in the neighborhood.

He discovered one very pertinent thing in trying to do a balanced-product-selling job. "I like to do a balanced job for one very important reason," he says. "If all of your time is spent on one appliance you will perhaps do as much dollar volume, but you will make many deals that are not profitable. However, by putting your efforts on a balanced job, you get this volume and have a better choice of deals and can select the ones that are more profitable."

Probably the most gratifying note in which to end the Larson story is that while the new Pontiac was being presented to him, and pictures were being taken, he was interrupted and had to leave to close another ironer sale.

New Distributors

Seven For Stewart-Warner

CHICAGO—Six new distributors for Stewart-Warner appliances have recently been appointed. New distributors are Ball Store Fixture Co., Dayton, Ohio; E. M. Roberts, Jr., Phoenix, Ariz.; Royal-Eastern Electrical Supply Co., New York City; Z.C.M.I. Wholesale Appliance, Salt Lake City, Utah; Old Dominion, Inc., Toledo; and Behrer-Nason Co., White Plains, N. Y.

New S-W radio distributors include Graybar Electric Co., Cincinnati; Forston Distributing Co., Houston, Tex.; Appliance Merchandisers, Peoria, Ill.; Ball Store Fixture, Royal-Eastern, Old Dominion, and Behrer-Nason.

BALTIMORE—Baltimore Gas Light Co. has been appointed distributor for Stewart-Warner refrigerators in Maryland, several counties in Virginia, and parts of Delaware. The firm is also distributor for Universal electric ranges, Zenith ranges, and Horton washers. Emmett W. Cowman is manager of the firm's radio and refrigeration departments.

K-K Co. Handles Servel

OMAHA, Neb. — The K-K Co., Hastings, has leased new office and warehouse facilities here for distributing Servel Electrolux refrigerators. New quarters are in the Bekins warehouse, and C. K. Walroth, Omaha appliance man, will have charge of sales for eastern Nebraska and western Iowa. P. A. Cooper, factory sales representative in charge of promotion, will supervise activities for seven states surrounding Nebraska, with Omaha as his headquarters.

Sidles Takes on Gibson

OMAHA, Neb. — The Sidles Co., which recently moved its headquarters from Lincoln, Neb., to this city, has been appointed distributor of Gibson refrigerators for Nebraska and western Iowa, according to John Dauble, manager of the home appliance department. The new line was introduced to the company's salesmen and dealers at a recent meeting held at the Blackstone hotel.

Kelvinator In Oregon

PORTLAND, Ore. — The Portland branch of Harper-Meggee, Inc., has been appointed distributor in Oregon for the Kelvinator line of household appliances. M. M. Curtis is branch manager. The Harper-Meggee organization now distributes the Kelvinator line in Oregon, western Washington, and Alaska. Main office is in Seattle.

Hotpoint In Janesville

JANESVILLE, Wis. — The McVicar Plumbing & Heating Co. here has been named distributor for the Hotpoint line of appliances.

Zamoiski Adds Thor

BALTIMORE—Joseph M. Zamoiski Co., local distributor for Philco refrigeration, Philco-York room conditioners, and Philco radio, has been appointed distributor in this territory for Thor washers.

Columbia Wholesalers, Inc., Washington, D. C., affiliate of the Zamoiski firm, has also added Thor.

Williamson Predicts Big Year For Westinghouse

GALVESTON, Tex. — Walter Williamson, vice president of Westinghouse Electric Supply Co., predicted one of the greatest years in the company's history in discussing 1940 sales prospects before 60 dealers and salesmen of the Galveston area meeting at the Buccaneer hotel here.

H. H. Rogge, Pittsburgh, manager of the company's agency sales division, also predicted a favorable year for appliance sales.

Among officials of the firm attending the meeting were C. M. Mackey, Houston branch manager; E. C. Cummings, Fort Worth branch manager; R. G. Berle, district manager for Westinghouse Electric Supply Co., Dallas; William McKechnie, agency sales division sales manager, St. Louis; M. F. Donaldson, Houston; and R. W. Rossler, Dallas.

Home Service Advisors Meet In Southwest

DALLAS, Tex. — A conference for home service economists from utilities in the Southwest was arranged by Edison General Electric Appliance Co. recently and held in the home service auditorium of Dallas Power & Light Co. Meeting was in charge of J. C. Moody, and was attended by 40 home economists.

Miss Mildred Hickman, Hotpoint home economist and lecturer, conducted the series of demonstrations.

Stophlet Purchases Retail End of Lofgren Co.

MOLINE, Ill. — In a separation of the retail and wholesale activities of Lofgren's major appliance operation here, D. S. Stophlet has purchased the retail end of the business and will operate it under the trade name of "Lofgren's, D. S. Stophlet, Proprietor."

Fred B. Lofgren will continue to operate the wholesale end of the business under the name Lofgren Distributing Co., with offices at 1711 Fourth Ave., headquarters of the service department under the former set-up.

Both divisions will continue to handle Westinghouse refrigerators, Stromberg and Motorola radios, and Speed Queen laundry equipment. Mr. Stophlet, new proprietor of the retail operation, has been associated with the Westinghouse merchandising division for the past 10 years.

No changes in personnel or policies is contemplated in either retail or wholesale organization.

From Country To City For Dave Townsend

OMAHA, Neb. — David Townsend, country sales manager for the Omaha Appliance Co. for many years, has been promoted to city sales manager. Paul W. Jacobus, proprietor of the firm, will assume charge of all electrical appliance sales activities.

Cincinnati Firm Is Now Compton-Knodel Co.

CINCINNATI—Harten-Knodel Distributing Co., Norgie distributor in Cincinnati and Dayton, has changed its name to Compton-Knodel Distributing Co. Interest of former president Harten has been purchased by Harry F. Knodel, who succeeds to the title of president, and Elmer Compton, who had been secretary-treasurer since the original company was formed in 1928. Mr. Compton now becomes vice president of the new organization.

Ivy Ferguson, also a member of the original firm, continues as director, with the added title of secretary. Lenard Reker, former bookkeeper, has been made treasurer and a director of the new firm. Sales force, service and shipping departments, and office management remain unchanged.

Cincinnati office and display room of the new organization has been moved from the former location at Sycamore and Eighth to 309-315 John St. Dayton operation, at 1115 E. Third St., will continue to function exclusively on Norgie service.

Electric Supply Co. New Shreveport Dealer

SHREVEPORT, La. — The Electric Supply Co. has been organized here to handle electrical appliances. The firm is located at 708 Milam St. Abry S. Cahn is president.

LISTEN, PAL. IF YOU WANT TO WIN THE SALES CONTEST IN YOUR TERRITORY, YOU RIDE THIS DULUX SEAL!



"I'M NOT going to cut my own throat by tipping off the guys in my territory—but I don't mind letting you in on something that helped me make more money last year.

"Sure, I used all the approved methods, same as you do. But I found something else: You'll sell refrigerators faster and easier if you make this DULUX seal a feature part of your sales talk.

"WHY? Simple. There's a mighty good reason why most of the refrigerators made today are finished with DULUX—it's the finish women want. It stays white; it can take it—which means a lot when there are kids in the house; and it's easy to keep clean.

"With a talking point like DULUX to

open up with, you get the prospect on your side right away. Chances are, she already knows the Du Pont reputation for highest quality. And when she hears the service she can expect from DULUX, it's a push-over the rest of the way!"

Whether your year is a beaut or a bust often hinges on little things like this DULUX seal. That seal is put there for your use—to help you sell refrigerators faster. Feature DULUX in your selling—it pays!

E. I. du Pont de Nemours & Co. (Inc.) Finishes Division, Wilmington, Delaware.

DU PONT ON THE AIR—Listen to "The Cavalcade of America" every Tuesday, 9 p.m. E.S.T. over National Broadcasting Company Networks.

DU PONT
REG. U. S. PAT. OFF.

DULUX
REG. U. S. PAT. OFF.

The Modern Refrigerator Finish

1940's OUTSTANDING KELVINATOR'S 1940 Products For Easy Step-Up Selling—

IN THE 1940 Kelvinator line there are no illogical price steps—no awkward comparisons—no difficulties for salesmen in justifying the price of any one model as compared to every other model in the line.

Because, in addition to reducing prices from \$30 to \$60 on all models as compared to last year's prices—Kelvinator carefully planned a simplified line for 1940, standardizing 96% of its production on big 6 and 8 cubic foot refrigerators. Then, feature differences and appearance differences were incorporated in the various models, so that a salesman can easily and logically step-up a prospect from each model to the next higher-priced one.

This means larger dollar sales and bigger margins for the dealer as well as better satisfied customers.

A careful investigation will prove to you that Kelvinator's products, prices, discounts and step-up plan combine into the outstanding refrigeration program for 1940. Kelvinator Division, Nash-Kelvinator Corporation, 14250 Plymouth Road, Detroit, Mich.



MODEL SS-6
\$119⁹⁵*

6.25 cubic foot model
11.5 shelf area
Rust-proof, bar-type shelves
Automatic Light
Glass Chilling Tray
Two Extra-fast freezing shelves
4 ice trays—84 cubes—9 lbs.
Embossed Freezer Door
Kelvin Control to regulate freezing speeds
Polarsphere sealed unit
Permalux exterior—Porcelain-on-steel interior

MODEL S-6
\$139⁹⁵*

6.25 cubic foot model
11.5 square feet shelf area
Rust-proof, bar-type shelves
"Liftout" half shelf
Sliding Crisper with Glass Top
Automatic Light
Sliding Glass Cold Storage Chest
Two Extra-fast freezing shelves
4 Pop-Out Ice Trays—64 cubes—8 lbs.
Embossed Freezer Door
Kelvin Control to regulate freezing speeds
Vegetable Bin for Dry Storage
Polarsphere Sealed Unit
Permalux exterior—porcelain-on-steel interior

MODEL HS-6
\$169⁹⁵*

6 cubic foot capacity
Moist-Master Humidity System
11.9 square feet shelf area
Rust-proof, bar-type shelves
"Liftout" half shelf
Sliding Crisper with Glass Top
Automatic Light
Built-in Cold Storage Compartment
Porcelain Storage Chest and Cover
Two Extra-fast Freezing Shelves
4 Pop-Out Ice Trays—64 cubes—8 lbs.
Double-width Dessert tray
Newly styled Freezer Door
New, Flat, Disc-type Kelvin Control
Vegetable Bin for Dry Storage
Polarsphere Sealed Unit
Permalux exterior—Porcelain-on-steel interior

MODEL R-6
\$179⁹⁵*

6.5 cubic foot model
14.8 square feet shelf area
Rust-proof, bar-type shelves
Two, sliding, adjustable shelves
Twin, glass-covered, sliding Crispers
Twin Recessed Dome Lights
Porcelain Cold Chest with Cover
Two Extra-fast Freezing Shelves
4 Trays with Built-in Ice Tray Lifter and Speedy-Cube Release
Double width dessert tray
Newly styled Freezer Door
72 ice cube capacity—8 lbs.
DeLuxe Kelvin Control
Vegetable Bin for Dry Storage
Polarsphere Sealed Unit
Permalux finished exterior
Porcelain-on-steel interior

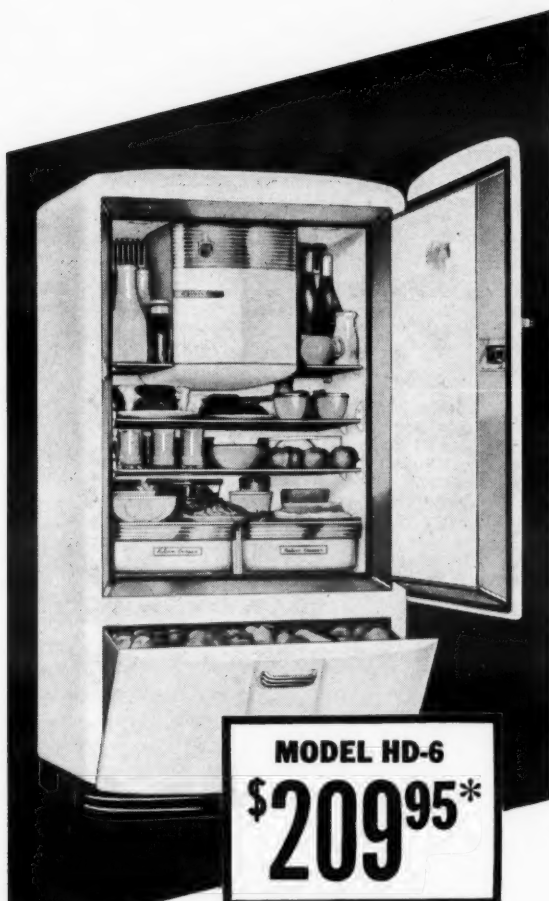
Look at the Size! Look at

STEP-UP STORY!

and Prices are Planned



8.2 cubic foot model
Same as S-6 *plus* extra storage space and ice capacity
16.3 square feet shelf area
Rust-proof, bar-type shelves
"Liftout" half shelf
Sliding Crisper with glass top
Automatic Light
Glass Cold Chest with Cover
Two Extra-fast Freezing Shelves
4 Pop-Out Ice Trays with special cube and tray release lever
Embossed Freezer Door
Double-width dessert tray
96 ice cube capacity—12 lbs.
Kelvin Control to regulate freezing speeds
Vegetable Bin for Dry Storage
Polarsphere Sealed Unit
Permalux finished exterior
Porcelain-on-Steel Interior



6.1 cubic foot capacity
Moist-Master Humidity System to keep foods moist and full flavored
14.4 square feet shelf area
Rust-proof, bar-type shelves
Two sliding adjustable shelves
Twin Sliding Crispers with Sliding Glass Tops
Twin Recessed Dome Lights
Built-in Cold Storage Compartment
Porcelain Storage Chest and Cover
Two Extra-fast Freezing Shelves
4 Trays with Built-in Ice Tray Lifters and Speedy-Cube Release
Double-width Dessert Tray
Newly Styled Freezer Door
72 ice cube Capacity—8 lbs.
New, Flat, Disc-type Kelvin Control with 12 Freezing Speeds
Vegetable Bin for Dry Storage
Polarsphere Sealed Unit
Permalux finished exterior
Porcelain-on-steel interior



8.2 cubic foot model
Same as R-6 *plus* extra storage space and ice capacity
16.3 square feet shelf area
Rust-proof, bar-type shelves
Two, Sliding adjustable shelves
Twin, glass covered sliding Crispers
Twin Recessed Dome Lights
Porcelain Cold Chest with Cover
Two Extra-fast Freezing Shelves
4 Trays with Built-in Ice Tray Lifters and Speedy-Cube Release
Double-width Dessert Tray with 2 Speedy Cube Releases
Newly Styled Freezer Door
108 Ice Cube Capacity—12 lbs.
De Luxe Kelvin Control
Vegetable Bin for Dry Storage
Polarsphere Sealed Unit
Permalux finished exterior
Porcelain-on-steel interior



8 cubic foot model—same as HD-6 *plus* extra storage space and ice capacity

Moist-Master Humidity System to keep foods moist and full-flavored.

15.9 square feet shelf area

Rust-proof, bar-type shelves

Two sliding adjustable shelves

Twin Sliding Crispers with Sliding Glass Tops

Twin Recessed Dome Lights

Built-in Cold Storage Compartment

Porcelain Storage Chest and Cover

Two Extra-fast Freezing Shelves

4 Trays with Built-in Ice Tray Lifters and Speedy-Cube Release

Double-width Dessert Tray with 2 Speedy-Cube Releases

Newly Styled Freezer Door

108 Ice Cube Capacity—12 lbs.

New, Flat, Disc-type Kelvin Control with 12 Freezing Speeds

Vegetable Bin for Dry Storage

Polarsphere Sealed Unit

Permalux finished exterior

Porcelain-on-steel interior

*Prices suggested are for delivery in the Kitchen with 5 year Protection Plan. State and local taxes are extra. Prices are slightly higher west of the Rockies.

the Name! Look at the Price!

6-Year Cumulative Record of Electric Refrigerator World Sales, Exports, Retirements and Market Saturation

Estimated by Air Conditioning & Refrigeration News on the basis of final totals for 1939 furnished by manufacturers in the Nema group (see tabulation below).

	World Sales	Exports	Sales In U.S.	Retirements	Distributor & Dealer Stocks	Total In Use In U.S.	Wired Homes*	Market Saturation
Dec. 31, 1933	5,885,000	356,000	5,529,000	800,000	75,000	4,654,000	19,844,000	23.4%
During 1934	1,390,000	107,000	1,283,000	63,000				
Dec. 31, 1934	7,275,000	463,000	6,812,000	863,000	125,000	5,824,000	20,694,000	28.1%
During 1935	1,688,000	120,000	1,568,000	114,000				
Dec. 31, 1935	8,963,000	583,000	8,380,000	977,000	125,000	7,278,000	21,204,000	34.3%
During 1936	2,180,000	184,000	1,996,000	225,000				
Dec. 31, 1936	11,143,000	767,000	10,376,000	1,202,000	200,000	8,974,000	21,888,000	41.0%
During 1937	2,500,000	190,000	2,310,000	358,000				
Dec. 31, 1937	13,643,000	957,000	12,686,000	1,560,000	300,000	10,826,000	22,800,000	47.5%
During 1938	1,430,000	176,000	1,254,000	140,000				
Dec. 31, 1938	15,073,000	1,133,000	13,940,000	1,700,000	125,000	12,115,000	23,420,000	51.7%
During 1939	2,085,000	185,000	1,900,000	250,000				
Dec. 31, 1939	17,158,000	1,318,000	15,840,000	1,950,000	150,000	13,740,000	24,451,243	56.2%

*Wired home figures furnished by Electrical Merchandising.

Yearly Sales Figures, And Market Data

(Concluded from Page 1, Column 5) slight drop from the 1938 average price of \$172.

AIR CONDITIONING & REFRIGERATION NEWS estimates that 250,000 household electric refrigerators were retired from use last year.

In any estimates of retirements, it must be borne in mind that the figure for refrigerators in use is based upon the Nema sales tabulations, and that Nema uses the number of cooling units sold to arrive at its totals, rather than the number of cabinets or compressors sold. This method of tabulating sales was a necessary factor in the early days, when many multiple systems were being sold, and one compressor served many cooling units, and in some cases the manufacturer did not even provide the cabinet.

Thus, because many cabinets are apparently being reconditioned for resale or are sold "as is," this does not in itself mean that a majority of cooling units, which are all counted as refrigerators "in use," are not being junked, as is indicated in the AIR CONDITIONING & REFRIGERATION NEWS estimate of 250,000 retirements last year.

In the study made by Associated Refrigerator Plant, Inc. of Philadelphia, which handles the traded-in

boxes for Philadelphia dealers, it was shown that of 2,000 boxes brought into plant on which records were kept, more than 33% had to be junked, and this despite the fact that the plant is especially set up to do reconditioning work. Furthermore, all of these refrigerators were from single residence dwellings, none from apartment houses.

This latter factor is important, because most apartment house replacements are junked, particularly those involving multiple systems. Reason for this is that individual evaporator sales are counted as sales of complete boxes in the Nema compilations, then the junking of a multiple system with 24 evaporators hooked up to it must be counted as the retirement of 24 refrigerators in any calculations to arrive at the number of refrigerators in use.

Thus, from the Philadelphia study it must seem reasonable to believe that in most communities, where reconditioning facilities haven't been readily available, and where nearly 100% of apartment house replacements are junked, that the percentage of replacements that are retired from use will be relatively high.

With the reductions for retirements, and stocks in the hands of distributors and dealers, it is estimated that the total number of refrigerators in use in the United States as of Jan. 1, 1940, stood at 13,740,000 units. Total wired homes in the U. S. as of Jan. 1, according to authoritative figures, stood at 24,451,243, thus putting the market saturation for refrigerators at 56.2%.

Nema Members Sell 1,980,195 Units In '39

The following 17 companies reported sales to the Refrigeration Division of the National Electrical Manufacturers Association (Nema) on household electric refrigerators for the year 1939:

Apex Electrical Mfg. Co., Crosley Corp., Edison General Electric Appliance Co., Inc., Frigidaire Div. General Motors Corp., Gale Products Div. Outboard Marine & Mfg. Co., General Electric Co., Gibson Electric Refrigerator Co., Kelvinator Div. Nash-Kelvinator Corp., Landers, Frary &

Clark, Leonard Div. Nash-Kelvinator Corp., Norge Div. Borg-Warner Corp., Philco Refrigerator Co., Sparks-Withington Co. (out as of Oct. 31, 1939), Stewart-Warner Corp., Sunbeam Electric Mfg. Co., Universal Cooler Corp., and Westinghouse Electric & Mfg. Co.

The sales of the reporting companies include units manufactured for the following concerns: Montgomery Ward & Co., Potter Refrigeration Corp., and Sears, Roebuck & Co.

SALES FOR THE YEAR 1939

	Domestic	Canadian	Other Foreign	Total World
Lacquer (Ext.) Cabinets Complete				
1. Chest	1,347	7	174	1,528
2. Less than 3 cu. ft.	1,587	353	1,940	
3. 3 to 3.99 cu. ft.	31,196	273	11,242	42,711
4. 4 to 4.99 cu. ft.	201,706	14,643	31,938	248,287
5. 5 to 5.99 cu. ft.	319,258	13,983	20,099	353,340
6. 6 to 6.99 cu. ft.	994,863	12,612	15,986	1,023,461
7. 7 to 7.99 cu. ft.	43,981	201	721	44,903
8. 8 to 9.99 cu. ft.	87,744	735	3,544	92,023
9. 10 to 12.99 cu. ft.	371	4	375	
10. 13 cu. ft. and up.	166	3	7	176
11. Total Lacquer	1,680,632	44,044	84,068	1,808,744
Porcelain (Ext.) Cabinets Complete				
12. Up to 4.99 cu. ft.	715	30	183	928
13. 5 to 5.99 cu. ft.	24,246	647	2,345	27,238
14. 6 to 6.99 cu. ft.	70,104	310	2,238	72,652
15. 7 to 7.99 cu. ft.	8,174	7	141	8,322
16. 8 to 9.99 cu. ft.	28,014	74	1,333	29,421
17. 10 to 12.99 cu. ft.	2,571	9	183	2,763
18. 13 cu. ft. and up.	3,109	30	258	3,397
19. Total Porcelain	136,933	1,107	6,681	144,721
20. Total—Lines 11 and 19	1,817,565	45,151	90,749	1,953,465
21. Separate Systems, 1/4 hp. or less.	1,412	1,941	8,837	12,190
22. Separate Household Evaporators.	664	4,748	9,128	14,540
23. Total—Lines 20, 21, and 22	1,819,641	51,840	108,714	1,980,195
24. Condensing Units, 1/4 hp. or less.	56†	4,276	11,144	15,476†
25. Cabinets—No Systems	301	3	163	467
Index Value* of Total Dollar Sales.	124.0	274.0	93.5	123.0

*Based on weighted sales for 1934, 1935, and 1936. †Includes adjustments.

Household Electric Refrigerator Sales By Years and Average Price

Estimated World Sales by All U. S. Manufacturers by Years

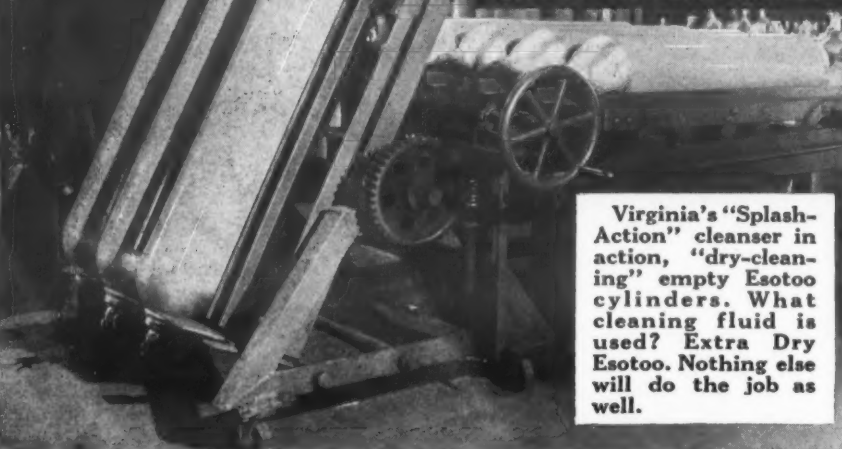
Year	No. of Units	Average Retail Price	Retail Value
Up to 1920	10,000	\$600	\$ 6,000,000
1921	5,000	550	2,750,000
1922	12,000	525	6,300,000
1923	18,000	475	8,550,000
1924	30,000	450	13,500,000
1925	75,000	425	31,875,000
1926	210,000	390	81,900,000
1927	390,000	350	136,500,000
1928	560,000	334	187,040,000
1929	840,000	292	245,280,000
1930	850,000	275	233,750,000
1931	965,000	258	248,970,000
1932	840,000	195	163,800,000
1933	1,080,000	170	183,600,000
1934	1,390,000	172	239,080,000
1935	1,688,000	166	280,208,000
1936	2,180,000	164	357,520,000
1937	2,500,000	171	427,500,000
1938	1,410,000	172	242,520,000
1939	2,085,000	169	352,365,000

New York Is Still 'Way Out In Front as the Largest Buyer

States and Territories	Quantity Household Low Sides December Cumulative
Alabama	547 17,528
Arizona	110 4,706
Arkansas	615 11,111
California	7,712* 126,579
Colorado	844* 12,326
Connecticut	555* 29,158
Delaware	168* 3,715
District of Columbia	909 19,340
Florida	2,333 26,491
Georgia	717 25,606
Idaho	433 6,439
Illinois	7,130 146,462
Indiana	2,327 45,890
Iowa	1,276 32,631
Kansas	786 16,970
Kentucky	1,040 24,955
Louisiana	957 23,280
Maine	273 7,332
Maryland	1,994 22,708
Massachusetts	4,015 69,858
Michigan	3,620 84,864
Minnesota	2,089 47,928
Mississippi	389 10,449
Missouri	2,365 51,140
Montana	161 4,984
Nebraska	531 13,835
Nevada	111 1,655
New Hampshire	22* 5,126
New Jersey	2,108 69,425
New Mexico	116 3,003
New York	11,392 247,302
North Carolina	1,065 31,936
North Dakota	130 3,609
Ohio	5,018 104,806
Oklahoma	2,009 20,000
Oregon	1,590 14,928
Pennsylvania	7,787 170,156
Rhode Island	349* 9,037
South Carolina	615 14,278
South Dakota	188 4,616
Tennessee	1,108* 30,305
Texas	2,276* 71,490
Utah	511 8,721
Vermont	187 3,468
Virginia	1,430 29,131
Washington	2,345 31,776
West Virginia	707 17,944
Wisconsin	2,011 38,268
Wyoming	150 2,381
Total United States	86,011 1,819,641
Canada	1,539 51,940
Other Foreign (Incl. U. S. Possessions)	5,405 108,714
Total for World	92,955 1,980,195

*Includes sales and credits.

VIRGINIA'S CYLINDERS TAKE THEIR OWN MEDICINE



Virginia's "Splash-Action" cleanser in action, "dry-cleaning" empty Esotoo cylinders. What cleaning fluid is used? Extra Dry Esotoo. Nothing else will do the job as well.

High-speed cleaning of empty cylinders at the Virginia Smelting Co. Plant cuts time between receipt and recharge by speeding their routing through the Plant and simplifying storage problems. The method we use cuts the percentage of cylinders rejected in final inspection—all adding up to smoother Plant operations and better service to you.

EXTRA DRY ESOTOO METHYLENE CHLORIDE

V-METH-L

VIRGINIA SMELTING COMPANY

Located at tidewater, Hampton Roads
West Norfolk, Virginia

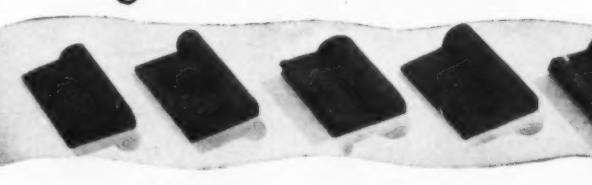


EVERYTHING IN RUBBER FOR THE REFRIGERATOR

• Miller offers the service engineer an authentic line of replacement parts that duplicate the original point for point in both design and quality. Each item is an exact duplicate of that supplied the refrigerator manufacturer, made from the same dies, of the same age and grease-resisting rubber compounds.

And because Miller is the No. 1 supplier of rubber parts to the refrigeration industry, it can provide replacements that enable you to service 80% of all boxes in use today. All items are stocked for immediate delivery. For complete information, see your local Miller jobber or write—

MILLER RUBBER COMPANY, INC., AKRON, OHIO
"Engineers in Rubber"



- Door Gaskets
- Unit Mountings
- Sponge Rubber Insulation
- Shelf Hook Shields
- Breaker Collars
- Hard Rubber
- Rubber Covered Metal Parts
- Molded Parts

MASTERCRAFT ADJUSTABLE PAD and CARRYING HARNESS

Efficient, sturdy and economical. Provides safe handling and thorough protection of refrigerators. Pad and harness are separate units and both adjustable to practically all styles and sizes of cabinets. Adjustable Pad \$9.75 each. Adjustable Harness \$6.35 each. f.o.b. Chicago.

Lettering on pad at only \$1.00 per order extra. Write for latest folder and prices on pads for refrigerators, washers, ironers, ranges, radios, etc.

BEARSE MANUFACTURING COMPANY
INCORPORATED 1921
3815-3825 Cortland Street, Chicago, Illinois

Startling Figures—Four Million Refrigerators Creak With Age

Porcelain Enamel Institute Takes a Census and Indicates What the Replacement Market Is

Paul W. Keating is a market analyst of considerable standing who has recently been making extensive studies of the electric refrigeration industry for the Porcelain Enamel Institute, which is interested in projecting the future market for porcelain enamel in this field.

Mr. Keating has come to a number of interesting conclusions as to the future of household refrigeration, conclusions which will appear in this and subsequent articles for the News. The article which follows has to do with the replacement market.

By Paul W. Keating

The long faces of 1938 are out of the household refrigerator picture today. And no wonder, for hasn't the industry come back with a whopping 1939 sales record? More than 1,950,000 household boxes sold in the U. S.—and there's a much healthier all-around business situation today than we could see a year ago.

The industry is back on the track and is aiming at a well-defined market, which is more than could be said of some recent years when promotion and selling were scattered across every income group, from "royalists" to reliefers.

It has taken a year to realize that the replacement market is really here. Enough salesmen are making enough replacement sales to know that household refrigeration has definitely moved into the long-predicted stage where the best prospects already own automatic refrigerators.

Prospects Are 'Ideal' Type

To say that these prospects are ideal—the kind that salesmen dream about—is putting it mildly enough.

To begin with, there are enough of them to put real folding money in the pockets of every salesman, dealer, and distributor worthy of his job.

Second, they have more money, generally speaking, than the prospects who've never owned an automatic box.

Third, they're educated to the basic values of automatic refrigeration.

That last point alone would have been considered worth \$10 to \$20 a day by the 1930 salesman! Why? Because he had to spend at least half his time convincing his prospects on the basic values which these 1940 prospects for replacement boxes already take for granted.

We said that there are enough of these prospects to mean plenty of sales—plenty of good, hard cash—in 1940. Well, let's see—is that just another round generality or can it be proved in actual numbers?

Here's what the sales figures show:

From 1921 to 1925 inclusive, 138,000 household electric refrigerators were sold. These boxes are 14 or more years old. And here are the year-by-year figures on later sales, as the industry passed through the pioneering stage:

Year	Sales	Present Age of Boxes*
1926	210,000	13 years
1927	380,000	12 years
1928	536,000	11 years
1929	778,000	10 years
1930	791,000	9 years
1931	906,000	8 years
1932	798,000	7 years
1933	1,016,000	6 years

*(Minimum age—1930 boxes, for example, range for nine to 10 actual years of service, depending on exact date of sale.)

This means that 2,042,000 of these boxes are 10 or more years old; 3,739,000 are eight or more years old; and 4,537,000 are seven or more years old.

Whoa, there! Just a minute, you say. Not all of those old boxes are still in service, by any means. Right you are. So let's go a couple of steps further in our calculations to establish the facts about this replacement market.

Early last fall Davee, Koehnlein, and Keating, Chicago sales analysis organization, conducted a study of refrigerators in 2,286 homes in Atlanta, Chicago, New Orleans, Philadelphia, Peoria, and Syracuse. This survey was very carefully planned

and controlled, just as the Gallup public opinion polls are, to get an accurate, cross-section of A, B, and C income groups in these six cities.

Of the 2,286 refrigerators that were seen and checked over, inside and out, by the investigators, 9.2% were 10 or more years old, 17.1% were eight or more years old, and 21.9% were seven or more years old.

The major purposes of the study did not include the measurement of refrigerator ages, but the ages were carefully recorded. The percentage figures will always vary in different cities, depending on comparative saturation of the market in each city at various times over the last 15 years. Nevertheless, it seems conservative to apply the percentages found by Davee, Koehnlein and Keating to the record of yearly refrigerator sales figures.

According to the National Electrical Manufacturers Association, 1,560,000 old units had been retired from service by Jan. 1, 1938. If we assume an increasing rate of replacement during the last two years, it's certainly generous to estimate that 198,000 additional boxes were retired in 1938 and 392,000 in 1939, making a total of 2,150,000 refrigerators now out of service.

Many of these boxes have been reconditioned and sold to lower-income homes. There they're doing the same educational job on the basic values of automatic refrigeration as they did in the homes of their original owners.

But suppose we consider them all out of service. That will make our estimate of replacement business in the other homes even more conservative.

The Age Brackets

Subtracting these boxes from the total number of household refrigerators sold in the U. S. to date—approximately 15,910,000—we get a total of 13,760,000 still in service.

Now we apply the percentage figures determined by Davee, Koehnlein and Keating in their study. And here are the results:

Of the boxes now in service, 9.2% or 1,265,000 are 10 or more years old; 17.1% or 2,352,000 are eight or more years old; 21.9% or 3,013,000 are seven or more years old.

More than a million and a quarter refrigerators that are thoroughly obsolete by even the most lenient standards! More than three million that were sold before Mr. Hoover became an ex-President! There's your hot-prospect market in a nutshell. And these estimates are purposely set very much on the conservative side, to avoid overstating the case.

Later in this series of articles we'll see just how well qualified these owners are as prospects—not merely for 1940 boxes but for the finest models in your line, the larger boxes with deluxe features and the superior finish that these users have learned to value highly. We'll see just how superior the 1940 refrigerators are to these old boxes—something no one realizes until he makes an actual comparison.

Now, however, let's stick to our examination of the extent of this \$150,000,000 1940 replacement market. By any standard you choose, replacement sales can and should reach a total of 750,000 to 1,000,000 in 1940 and should be maintained at or near the million level for the next three years, after which they will naturally increase in line with the

year-by-year sales picture of the last 10 years.

This is no guarantee that this number of replacement sales will be made this year. But that market is there, ready and waiting, if the industry does the selling job that should be done.

Up to this time, with rare exceptions, the job has not been done. The survey by Albert P. McNamee of McCall's Magazine and the later study of the replacement market by Arthur Hirose and Don Parsons of the same organization proved that about 99 out of 100 replacement sales in 1938 were made by the customer—not by the salesmen. The refrigerators were bought—not sold. Customers came in to buy, whereupon the salesmen, in effect, took the order.

Replacements Not 'Sold'

There is little evidence to show any change in this situation in 1939. The result was that the industry continued to do a very effective selling job on new customers, and said, "Let the replacement sales fall where they may. We'll get them anyway." It wasn't quite that bad, and some salesmen, some dealers, some distributors, did the necessary selling job in the replacement market. But the general results are shown only too clearly by the sales figures.

Approximately 20% of 1939 sales were replacements—about 392,000 units. And yet an absolute, bare-to-the-bone minimum estimate of the boxes still in service that were 10 to 15 years old last year is 500,000, to say nothing of more than 1,700,000 additional units that were seven,

eight, or nine years old.

So we can smile with satisfaction over the total of 1939 sales, but there isn't much reason for crowing about the handling of the replacement market to date.

So what? Just this: Last year's replacement sales can and should be at least doubled this year—if the industry sells these prospects, the cream of the crop, instead of waiting for them to buy of their own volition.

This doesn't necessarily mean that the percentage of total sales accounted for by replacements will be 40% in 1940, as compared with 20% last year. It may be over 40% or under that figure, depending on the total sales figure. What we're talking about here is the simple fact that 750,000 to 1,000,000 replacement sales are within the industry's grasp this year.

Will Vary By Areas

The percentage of sales that are replacements will vary in each community, depending on the refrigeration sales history of the community and its present saturation. Chances are it will run from 10% at the very poorest to 50% in some areas with high saturation and a long record of effective refrigeration promotion.

Davee, Koehnlein and Keating interviewed more than 100 dealers and distributors handling various brands in the six cities covered by their recent survey. The average of replacement sales in each city reported by the men interviewed was as follows: Atlanta, 24.5%; Chicago, 19.6%; New Orleans, 9%; Peoria, 32.9%; Philadelphia, 37.7%; Syracuse, 40%.

These percentages simply represent averages of the estimates given by dealers and distributors as taken from spot checks of their sales records. Consequently the investigators do not regard them as conclusive. The figures for New Orleans and Atlanta are probably very conservative and those for Syracuse, Philadelphia, and Peoria on the high side. But they are indicative of a replacement market that has definitely arrived and that can be counted on today in your selling.

You don't have to tell Washington, D. C. and Atlanta salesmen about the replacement market. They've got to sell it, because of the high saturation. That's the situation of the future for all American communities. And far from being a bad condition, it's a good one—an assurance of a stabilized sales level in the future.

But today, in 1940, this market must be sold. It has already been cultivated once, by the pioneering salesmen of 1925-33. On every count, it's easier to sell here than on unbroken ground. And the remainder of this series of articles will show how, in your selling, you can take advantage of this replacement market—the greatest profit opportunity of 1940.

1,434,419 Cleaners Sold In '39, Gain of 10%

CLEVELAND—A total of 1,434,419 vacuum cleaners were sold during 1939, an increase of 9.84% over the 1938 total of 1,305,873, according to figures reported by Vacuum Cleaner Manufacturers' Association.



WHEN YOU INSTALL A REFRIGERATOR IN THIS KITCHEN

WITH an accelerating trend towards finer kitchen equipment for the modern home, make sure the refrigerator you sell is styled and finished for tomorrow.

Bonderizing under the enamel provides a barrier to kitchen humidity, assures positive finish adhesion and protects the metal from rust. Bonderizing assures satisfaction to your customer and minimizes the possibility of refinishing service costs. The finish on the Bonderized cabinet stays rust-free for years longer than the unprotected unit.

Rust-proofing is a selling feature that may be used effectively in every demonstration. It is a convincing sales point. Use it.

PARKER RUST PROOF COMPANY
2197 E. MILWAUKEE AVE., DETROIT, MICH.

Send for This Book

It includes what every salesman should know about Bonderizing.

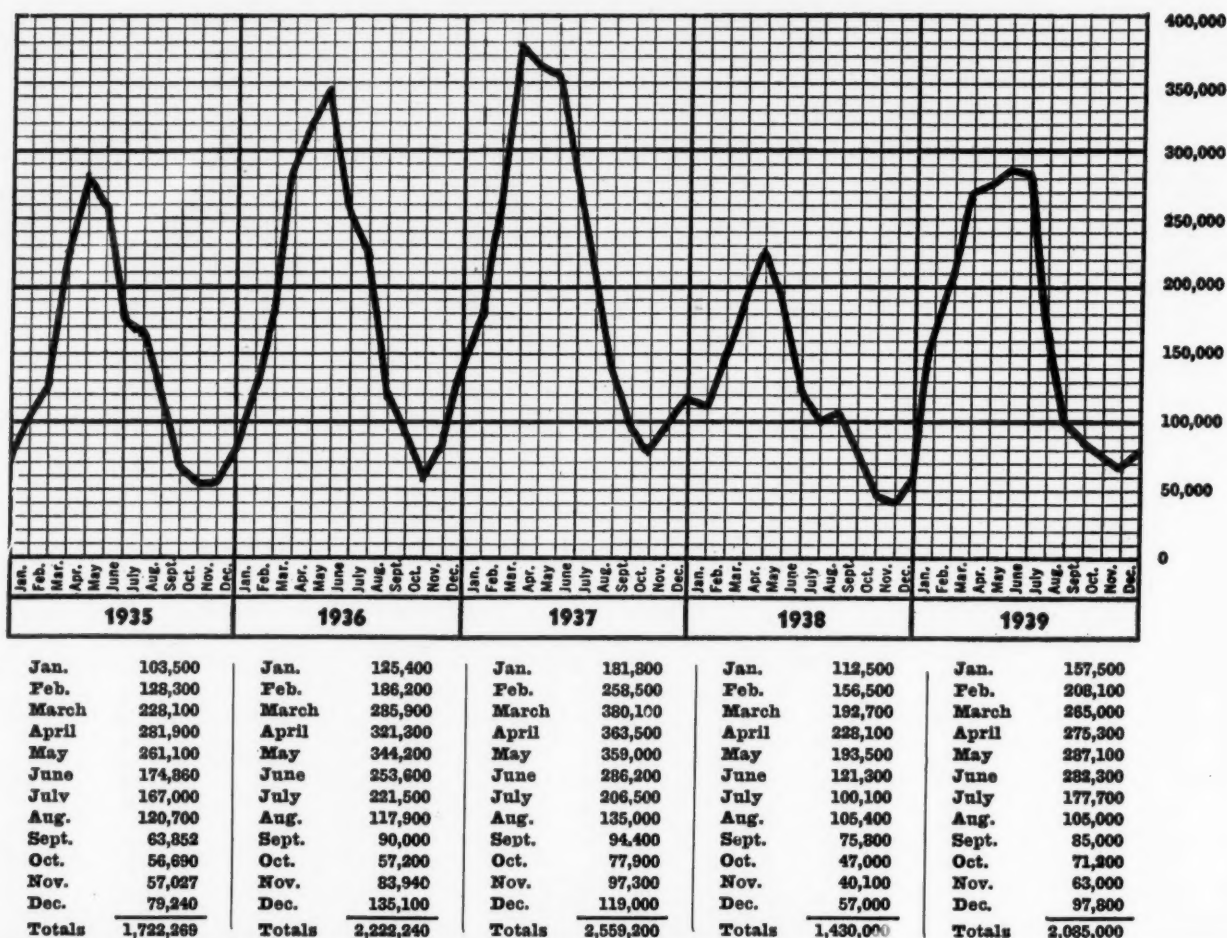
Be Sure That IT WILL NOT RUST

PARKER
Processes CONQUER RUST
BONDERIZING • PARKERIZING

Monthly Record of Household Electric Refrigerator Sales

(World Sales of All U. S. Manufacturers to Distributors and Dealers)

NOTE: Chart, reprinted from Jan. 10 issue, shows estimated sales for December, 1939. Tabulation gives revised figure of 97,800.



BUNDY TUBING



Completely Fabricated
Tubing Parts

BUNDY TUBING CO. • DETROIT

Fed. Trade Commission Won't 'Try' Advertising

WASHINGTON, D. C.—To correct apparent misconceptions as to the scope and character of its proposed inquiry into the "Methods and Costs of Distribution" (see AIR CONDITIONING & REFRIGERATION NEWS for Feb. 7), the Federal Trade Commission has issued a staunch denial of any "purpose or intention of singling out advertising any more than any other item of distribution costs."

"Purpose of the inquiry is to ascertain and assemble pertinent facts concerning the whole subject of distribution in a number of industries," the commission's statement explains, so naturally the amount of emphasis placed on advertising will vary with the importance of advertising to the particular industry being surveyed. But in no case, it continues, will advertising be singled out as the object of a specialized attack. In the numerous inquiries conducted by the commission and in the many thousands of cases in which it has made investigations and taken corrective action, the FTC, according to its own statement, has never made any declaration or taken any position against advertising as such.

Furthermore, this statement concludes, no such action is contemplated. Any action by the commission in regard to advertising has been confined to the elimination of misleading advertising under the FTC Act, and of unlawful advertising allowances under the Robinson-Patman Act.

From 1/4 to
25 TONS
of refrigeration

Brunner Refrigerating and Air
Conditioning equipment com-
prises air and water cooled
condensing units for practi-
cally all types of commercial
applications up to and includ-
ing 25 tons of refrigeration...
Catalog promptly on request.
Brunner Manufacturing Co.,
Utica, N. Y., U. S. A.



FOR YEARS THE SYMBOL OF QUALITY

Refrigerator Sales By States

(This Tabulation Includes Only the Sales Reported by Manufacturers in the Nema Group)

	1934	1935	1936	1937	1938	1939
Alabama	14,283	22,320	21,348	24,047	10,495	17,528
Arizona	3,526	5,373	5,674	7,628	2,699	4,706
Arkansas	7,885	9,420	10,835	11,903	6,464	11,111
California	58,476	114,923	153,608	148,271	90,115	126,579
Colorado	8,969	11,416	14,002	14,239	8,813	12,326
Connecticut	15,851	22,536	32,049	41,482	16,740	29,158
Delaware	2,599	3,150	3,607	4,991	2,387	3,715
Dist. of Columbia	10,813	11,262	17,856	18,744	14,981	19,340
Florida	14,293	26,007	28,341	29,616	17,807	26,491
Georgia	24,777	27,034	31,006	35,741	14,220	25,606
Idaho	3,756	6,676	8,743	8,949	4,166	6,439
Illinois	91,545	107,672	138,631	171,464	103,093	146,462
Indiana	29,981	36,844	53,305	61,766	27,613	45,890
Iowa	17,414	23,217	27,559	32,712	21,114	32,631
Kansas	18,862	18,343	22,008	23,410	12,806	16,970
Kentucky	16,737	16,958	25,220	28,883	13,961	24,955
Louisiana	8,442	14,260	18,754	21,606	16,001	23,280
Maine	5,942	7,247	6,793	8,486	5,212	7,332
Maryland	21,732	20,794	21,189	27,744	15,591	22,703
Massachusetts	44,151	60,943	74,191	92,441	47,227	69,858
Michigan	45,636	63,644	97,078	116,763	52,400	84,864
Minnesota	15,087	20,854	26,674	40,025	31,343	47,928
Mississippi	4,372	6,728	10,364	10,794	5,850	10,449
Missouri	45,319	43,944	59,068	60,422	34,044	51,140
Montana	4,433	5,983	8,378	8,198	3,145	4,984
Nebraska	12,186	15,877	16,577	16,410	8,817	13,835
Nevada	1,102	1,834	2,484	2,606	1,272	1,655
New Hampshire	4,122	5,284	6,021	6,557	3,423	5,126
New Jersey	50,513	64,013	81,798	90,242	46,654	69,425
New Mexico	2,163	3,129	3,601	4,441	2,188	3,003
New York	160,539	178,659	222,327	263,887	166,906	247,302
North Carolina	17,584	24,306	34,226	44,298	20,882	31,936
North Dakota	2,715	3,825	3,096	4,048	2,771	3,609
Ohio	76,979	90,331	124,616	159,007	62,718	104,806
Oklahoma	15,170	16,279	18,936	21,504	12,854	20,000
Oregon	13,152	14,090	20,649	16,671	9,391	14,928
Pennsylvania	108,802	117,982	172,092	210,397	105,960	170,156
Rhode Island	6,756	7,459	9,618	12,351	4,582	9,037
South Carolina	8,434	12,385	16,684	20,971	8,654	14,278
South Dakota	3,665	4,878	4,780	4,588	2,908	4,616
Tennessee	22,861	23,804	29,136	33,762	16,614	30,305
Texas	45,764	60,350	75,610	87,649	54,092	71,490
Utah	5,057	6,932	10,890	11,595	6,369	8,721
Vermont	2,609	3,233	4,172	5,680	2,827	3,468
Virginia	19,244	21,478	29,441	33,963	17,430	29,131
Washington	15,527	21,217	31,348	31,004	18,632	31,776
West Virginia	15,381	15,081	22,768	25,534	10,789	17,944
Wisconsin	16,525	24,506	32,267	48,280	25,058	38,268
Wyoming	1,970	2,300	2,959	2,965	1,549	2,381
Total U. S.	1,157,890	1,446,790	1,892,378	2,203,335	1,191,627	1,819,641

Wired Homes, Farms, and Places of Business

Regional or State	Farms Served 1939	Residential 1939	Commercial and Industrial 1939
United States	1,786,000	22,665,243	4,190,860
New England	88,300	2,035,101	345,200
Maine	19,000	169,152	34,400
New Hampshire	10,300	112,074	18,900
Vermont	9,900	66,198	15,100
Massachusetts	22,900	1,101,037	185,100
Rhode Island	4,000	170,960	26,800
Connecticut	22,200	415,680	64,900
Middle Atlantic	234,000	6,215,109	1,171,800
New York	100,000	3,247,707	634,000
New Jersey	24,000	1,032,891	200,700
Pennsylvania	110,000	1,934,511	337,100
East North Central	524,500	5,371,070	895,400
Ohio	140,000	1,429,749	240,600
Indiana	89,500	622,675	117,500
Illinois	80,000	1,689,969	255,600
Michigan	133,000	1,059,711	175,400
Wisconsin	82,000	568,966	106,300
West North Central	198,200	2,091,195	442,930
Minnesota	35,000	434,938	98,700
Iowa	61,000	423,056	77,100
Missouri	43,000	600,948	119,500
North Dakota	4,800	60,056	19,530
South Dakota	3,900	76,800	17,640
Nebraska	24,500	199,658	46,660
Kansas	26,000	295,739	63,800
South Atlantic	207,800	1,927,616	359,310
Delaware	3,200	44,368	9,170
Maryland-Dist. of Columbia	17,800	467,761	77,050
Virginia	38,000	286,278	53,600
West Virginia	22,000	209,730	36,500
North Carolina	49,500	305,865	42,700
South Carolina	23,000	111,440	25,140
Georgia	40,100	228,616	55,650
Florida	14,200	273,558	59,500
East South Central	127,200	796,572	165,940
Kentucky	29,800	255,995	49,300
Tennessee	38,000	240,738	50,100
Alabama	37,000	193,270	38,870
Mississippi	22,400	106,569	27,670
West South Central	106,700	1,290,036	304,260
Arkansas	16,100	117,752	31,660
Louisiana	15,400	224,279	44,300
Oklahoma	21,200	248,337	63,000
Texas	54,000	699,668	165,300
Mountain	83,500	607,821	118,710
Montana	6,600	85,818	16,250
Idaho	24,000	75,694	14,180
Wyoming	3,600	34,430	7,470
Colorado	17,100	188,724	37,600
New Mexico	3,400	34,410	9,510
Arizona	8,000	73,569	14,130
Utah	19,500	95,436	15,050
Nevada	1,300	19,740	4,520
Pacific	215,800	2,330,723	387,310
Washington	55,500	388,795	63,730
Oregon	35,800	212,377	46,880
California	124,500	1,729,551	276,700

Source: Edison Electric Institute, 1939 estimated on basis of first 10 months.

Unit Food Cooling Systems Installed For Huge Minneapolis Produce Terminal

Rock Island Terminal For Storage as Well as Unloading May Set Precedent For Railroads

MINNEAPOLIS—Thirty-seven refrigeration cooling unit sections, cooling an aggregate of 90,000 cubic feet of storage capacity are used in the Rock Island Fruit and Produce Terminal, completed here last year, in an installation which may broaden the possibilities for the application of refrigeration in railroad terminal work.

The installation is significant in that it is the largest structure in the Northwest which combines facilities for unloading and the storage of perishables. Secondly, it is one of the few in the country in which railroads offer refrigerated storage space for client-tenant commission houses receiving over the railroad's line.

The Rock Island's terminal in Minneapolis was formerly a freight house. In order to be able to make a bid for a larger share of the business of transporting perishable foods, the line decided to remodel the old structure, 540 by 42 feet, install refrigeration, and convert it into warehouse sections for lease to fruit and produce distributors.

This was done and, in addition, a structure 540 by 130 feet was built and the new and the remodeled structures made into one. This provided a 540 by 100 foot "warm house," in size second to none in the Northwest, where refrigerator cars could be unloaded safely in cold weather.

37 REFRIGERATION ROOMS

Secondly, this setup provided close to 85,000 square feet of floor space, a large share of it taken up by the 37 refrigeration rooms, where renting commission houses could safely store, cool, and, in the case of certain perishables, ripen fruit and produce until ready for distribution. The "warm house," served by three tracks accommodating 36 cars, also contains a 30-foot-wide road which trucks of non-renting distributors use for access to cars being unloaded. The available warehouse space was divided into only six sections, with arrangements being made for refrigeration and rental of five of the sections before remodeling began.

The Westerlin & Campbell Co. of St. Paul, Minn., installed the refrigeration. Each of the 37 rooms was designed for and built to the specifications of the individual tenant to use it. Each room is provided with separate controls.

TOMATOES ARE 'SPECIAL'

Twenty-four of the rooms, designed especially for storage and ripening of bananas and tomatoes (which require special attention) are located in the basements of the sections. The remainder of the rooms are on the main floor directly adjoining the doors leading to the building-long unloading platform in the "warm house."

Twelve of the main floor rooms are divided into two types: one for produce such as lettuce, carrots, etc. which arrives, and must be stored, wet packed; the other for produce to be kept dry packed. Wet rooms require a temperature from 34 to 36° F. Dry rooms require 38 to 42° F.

FREEZER ROOM—RACK COILS

The thirteenth room is of the freezer type. It is also located on the main floor and is used for quick-frozen foods. A below zero temperature is maintained.

There are, in all, 17 York condensing units, all using "Freon-12," serving the 37 rooms. The freezer room, 18 by 11 by 9 feet, alone has rack pipe coils. The remainder have McQuay units, each with heat exchangers built in to maintain high operating efficiency. The 12 produce rooms run in size from 9 by 9 by 19

feet to 9 (height) by 28 by 30 feet; the 24 basement rooms, from 12 ft. 4 1/4 inches by 14 feet 6 inches by 7 feet 6 inches to 12 feet 4 1/4 inches by 23 feet 6 inches by 7 feet 6 inches.

TYPE OF CONTROLS

All equipment is so designed as to maintain proper relative humidity. Controls which automatically defrost the coils with each refrigeration cycle eliminate the danger of ice forming in the unit coolers.

Temperature control in each room is accomplished by a remote bulb-type thermostat with adjustable temperature selection. The thermostats operate solenoid liquid "Freon-12" valves, and also start the refrigeration machines.

Six condensing units operate the 12 produce rooms, two rooms to each unit. The freezer room is operated by a separate low-temperature unit. The racks consist of 1,800 feet of 3/4-inch seamless, scale-free steel tubing. Insulation of the produce rooms consists of 4 inches of rock cork. The freezer room has 6 inches.

DEFROSTING METHOD

Hot gas defrosting is provided by a special line taken from the discharge of the compressor and arranged in the header so that tubing can be defrosted in sections of approximately 500 feet. The line is valved into four circuits, each circuit serving 500 feet, or one quarter of the entire tubing. This prevents room warm up during defrosting, inasmuch as the room can be operated on 75% of the coils while 25% of the coil is being defrosted.

Because of the special treatment necessary for bananas and tomatoes, the basement rooms were set out and provided with control features quite different from the other rooms. Cross-connected compressors were installed, each set of compressors operating a group of from two to seven rooms.

CROSS-CONNECTED MACHINES

Provision was made for taking care of 75% of the cooling load of each group. Of each set of compressors, either one may be operated separately in accordance with the number of rooms requiring cooling. Automatic cut-outs are provided, each room having its own controls: disconnect switch, relay, and thermostat.

Both bananas and tomatoes require preliminary heating before refrigeration. The heating is provided by portable Electromode heaters which are turned on in rooms containing freshly arrived green fruit for 18 to 24 hours. The heat causes the fruit to ripen.

RIPENING TEMPERATURE

After color has begun to change, the heat is turned off and refrigeration down to 56° F. started, checking the ripening process. Mist sprays are used in each room to prevent dehydration, both bananas and tomatoes having a high water content.

Use of cross-connected compressors with each compressor varying in capacity from its mate, allows a saving in operating cost by enabling cut-out of one or the other of the units in accordance with the number of rooms needing refrigeration at any one time. Provision for only 75% of the total cooling load was made because simultaneous full refrigeration of all rooms of one group is seldom needed. Insulation of these basement rooms consists of 3 inches of rock cork. All rooms have 1/2 inch of cement plaster on each side of insulation.

In addition to equipment for cooling, heating, and humidity control,

the 24 basement rooms also have special provisions for ventilation and odor control. Each room is equipped with back-water valves which, besides draining excess moisture from the floor, serve to eliminate air changes from one room to another. Such changes, with fruit in the different rooms in varying stages of ripening, might prove very costly.

The Minneapolis Rock Island Fruit & Produce Terminal embodies, besides its interest to those in the refrigeration field, several factors of interest from the point of view of air conditioning. The "warm house," with its more than two million cubic feet requiring a constant temperature of 45° F. to prevent newly arrived fruit from freezing during unloading, created an unusual problem.

CIRCULATION PROBLEM

It was necessary to provide a system which thoroughly diffused the warm air, eliminating direct blasts against refrigerator cars. Any concentration of heat on a single car might readily result in its entire contents being spoiled.

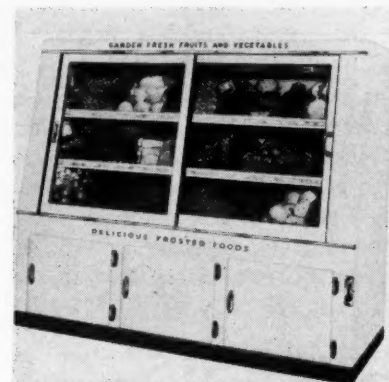
This problem was solved by the installation of rotating discharge featherweight unit heaters with specially designed two-way discharges. Only six such units are employed. They are mounted at a 35-foot height, off a two-pipe steam system main running down the center of the "warm house," and are spaced at 90-foot intervals. Small geared motors operating through spring belts control the rotating discharges.

The units, made by L. J. Wing Mfg. Co., are so designed as to direct the heated air downward, also to draw it from the upper part of the structure where its use is lost.

'Hi-Lo' Vegetaire New Sherer-Gillett Model

MARSHALL, Mich.—Addition of the new "Hi-Lo Vegetaire" and two self-serve dairy cases to the line of commercial refrigeration products manufactured by Sherer-Gillett Co. here, has been announced by this company.

The Hi-Lo unit—latest version of the Vegetaire case which Sherer-Gillett has been producing for several



years as its answer to the problem of fresh produce storage and display—combines fresh produce display with frozen food storage. Top of this case is the display portion, while in the bottom are the enclosed cabinets for storage of frozen foods.

One of the dairy cases, designed for eye-level, mass display of dairy products, oleos, cheeses, chilled fruit juices, and bottled beverages, is available in 7, 10, and 12-foot lengths, with three shelves for display and a

generous storage base. A smaller model is available in a 5-foot length only.

Crancer Co. To Handle Frigidaire Commercial

LINCOLN, Neb.—G. A. Crancer Co., electrical appliance dealer here, recently added air conditioning and commercial refrigeration departments. Frigidaire air conditioning equipment and Delco heating equipment will be handled. Full line of Frigidaire commercial refrigeration equipment, and Hussmann-Ligonier display cases have been added.

W. C. Wickham heads up the new departments. Engineering and planning services will be made available.

Bandoli Takes Post With Victor Adding Machine

CHICAGO—Marvin S. Bandoli, for several years associated with Kelvinator in various sales capacities, has been named general sales manager of Victor Adding Machine Co., manufacturer of office appliances.

In his new position, Mr. Bandoli will be in complete charge of all the Victor company's sales and advertising activities.

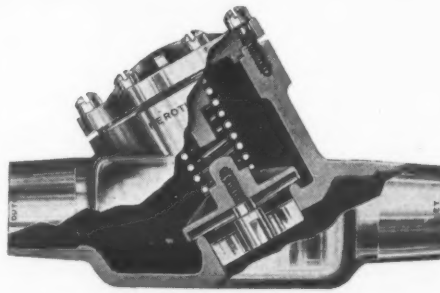
One-time refrigeration sales manager for Kelvinator, Mr. Bandoli during the past year supervised the installation and development of a number of factory test branches, a forerunner of the company's present program. He resigned the Kansas City zone managership to join the Victor organization.



Saving Thousands of Kilowatts Everyday!
KEROTEST G-W CONTROL
MASTER ROBOT OF THE REFRIGERATION WORLD



Kerotest GW Control-Type 120 is famous for the economical regulation of all refrigerator systems from 1/4" to 3/4".



Extra large capacity GW Controls are available in a complete range of sizes from 7/8" to 2 1/2" with O. D. Solder Connections.

Hailed as one of the greatest developments in refrigeration mechanics more than 10 years ago, and since installed in thousands of refrigerator systems, the Kerotest GW Control is today universally used throughout the industry to shorten the running time of the compressor and assure positive temperature control.

Installed in the lower pressure coils, these sensitive back pressure valves eliminate interference with the thermostatically controlled expansion valve . . . give complete control of the compressor switch . . . enables each coil to act independently, thus reducing the running time of the compressor to a minimum.

Applicable to old and new installations, Kerotest GW Controls are now available in a complete range of sizes from 1/4" to 2 1/2".

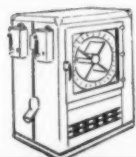
KEROTEST

KEROTEST MANUFACTURING COMPANY
PITTSBURGH, PENNSYLVANIA

SENSATIONAL NEW HAVADRINK

COIN VENDING COOLER

Novel 2-sided design—glass doors both sides—dispenses 2 flavors—is actually 2 coolers in one. Increases sales 25% or more in same location. Dry refrigeration. Sensation of Chicago Show.



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Why Distribution Costs So Much

IF there weren't any variables in selling, declares E. A. Terhune, Servel's sales manager, the industry wouldn't need any salesmen. As a matter of fact, it is because markets differ and change from season to season and from year to year, and because products, consumers, and salesmen do likewise, that we run into the complexities of today's merchandising problems.

The more variables and the greater their diversity and extremities, the more complex the sales operation becomes; and there is scarcely any form of selling, Mr. Terhune adds, that offers more variables in all its phases than the specialty merchandising of commercial refrigeration products.

In everyday specialty selling, the variables include not only price, style, utility, and product specifications, but variables of the seller, the buyer, and general conditions—all of which have a direct bearing on the consummation of the sale.

For example, the seller is affected by his experience from year to year, by his health from day to day, by the difference between his personality and that of his competitors, by the economics of the market, by government regulation, and by the changing nature of his product.

Variables of the buyer include his financial standing, age, size of family, physical well-being, and many other factors which vary from time to time within his own sphere and which are constantly at wide variance between any two prospects.

"You have to recognize all these variables and plan for them—consciously or unconsciously—if you are to reach the top expectancy in profitable selling," declares Mr. Terhune. He analyzes these variables as follows:

1. Variables of general conditions—
 - a. Geographical conditions
 - b. Market conditions
2. Variables of the product—
 - a. Specifications
 - b. Special features
 - c. Performance characteristics
 - d. Quality of workmanship, material, and design

- e. Price
- f. Utility
- g. Serviceability

3. Variables of the buyer—
 - a. Financial standing
 - b. Needs
 - c. Current equipment
 - d. Scope of business
 - e. Personal characteristics and desires

His analysis of the variables of selling constitute his own merchandising program for Servel commercial refrigeration and air conditioning products—a program that is reported elsewhere in this issue. The main reason for calling attention to these "variables" here is the fact that Mr. Terhune has put his finger, perhaps unconsciously, on the nubbin of the current Consumers vs. Distributors controversy.

Because it is likely that most readers of the NEWS will run smack-dab into this controversy some time this year—it's that hot—there is no time like the present for getting a true perspective on it.

The pink-tinged consumers' organizations have succeeded in selling large packets of American women on the idea that the cost of distribution is outrageously high. They produce studies showing the spread between the cost of feed for the hen and the price of an omelette to the restaurant patron. That spread, on the face of it, looks enormous. Women are impressed; they get emotional about it, they meet, and pass resolutions.

Patient, painstaking education is the only method of combatting such propaganda and emotional reaction. Women must be shown that the spread between the cost of production and the retail price is not there because some "middleman" is getting scandalously rich, but because there are so many "variables" in selling, so many variables in the service customers want.

Mass production is the science of applying machinery to reducing the number of variables in the fabrication of a product. The only manner in which this same method of saving could be applied to distribution would be to reduce the number of variables in human nature.

This has been done, of course. It has been done in the totalitarian states, it has been done in armies (organization of a totalitarian state is simply the equivalent of putting everybody in the army). It means enforcement of the ration-card system of distribution.

Under this system, you take what they give you, and keep your trap closed. You want your milk delivered to your doorstep? Shut up, you reactionary tool of the capitalists. You'll carry your pail down to the milk station and stand in line for your dipperfull, like the rest of them. You want a blue silk dress? That's what you think. The factories are turning out green cotton dresses this month.

It's the only alternative. Mass production reduces the cost of fabrication marvelously. But its very nature—its centralization of production facilities—increases the cost of distribution. Instead of walking around the block to the bootmaker for your shoes, they are sent to you from New England, and then displayed in a Main Street show window until you are ready to buy them. That costs money.



But even though mass-produced articles cost more to deliver, their production costs are so much less that the consumers' savings are tremendous. This means that he can have many more things than he could have enjoyed before. In turn, that makes him demand more services. And it's the services, the indulging of his individualism, which run up the cost of distribution.

In its 403-page study, "Does Distribution Cost Too Much?" the Committee on Distribution (headed by Willard Thorp, Stuart Chase, and other New Deal economists) of the Twentieth Century Fund surveys all the data and finally decides:

"It is safe to conclude, therefore, that if distribution does cost too much it is not primarily because of 'profiteering' but for other reasons. As a matter of fact the research findings show that most of what distributive agencies receive for their services in getting goods into the hands of buyers is represented by payments of wages and salaries. A large part of what the consumer pays for the wholesale and retail processes goes for wages and salaries of workers directly employed by distributive agencies. And most of the remainder, paid for rent and maintenance, heating, light and power, taxes, supplies, etc., also finds its way into the payrolls of the agencies supplying these services."

By greatly reducing services, costs can be cut substantially. That such economies have not been more widespread is apparently due to the willingness of buyers to pay not only for merchandise, but for service and for freedom of choice in buying a wide range of products.

Prof. James L. Palmer of the University of Chicago, in the Journal of Marketing, lists some of the services which marketing institutions might eliminate to cut the cost of distribution:

1. They might discontinue selling for credit.
2. They might eliminate free delivery service, reduce the frequency of delivery, or narrow delivery zones.
3. They might carry fewer brands of merchandise, thus restricting buyer choice.
4. They might stock smaller quantities of merchandise and refuse to handle slow-selling items, thus forcing many buyers to wait for delivery of orders.

5. They might occupy low-rent locations, thus forcing buyers to go out of their way to make purchases.
6. They might operate on an eight-hour instead of eleven-to-eighteen hour day, thus concentrating buying in shorter periods, but also restricting service.
7. They might sell only in quantity, thus eliminating small-unit purchases.
8. They might locate only in large trading centers, thus inconveniencing people not living nearby.
9. They might confine themselves to staple merchandise instead of aggressively seeking out new merchandise and new styles, thus reducing obsolescence losses and mark-downs.
10. They might withdraw the returned goods privilege, thus reducing selling and handling costs and mark-downs.
11. They might reduce the number of salespeople, thus cutting the labor cost but compelling customers to wait to be served.

Prof. Palmer makes the guess that a retail store operating under these conditions could cut the cost of retailing in two—if it had any customers left. He can see no immediate prospect of material reduction in the cost of marketing except through restriction in services.

It's not hard to figure out why the left-wingers behind the consumers' organizations are making these attacks on the cost of distribution. They have two objectives:

(1) To undermine confidence in the American Way of private enterprise, and thus pave the way for subjection of the people to the totalitarian state.

(2) To make the idea of the ration card a little less repugnant to the American people—the toughest job they face in selling totalitarianism to the United States.

These underlying reasons may not seem so apparent to the constituency of a woman's club, however. So when you are approached by an indignant committee, it may not help to rant about Joe Stalin and Earl Browder. With all the patience you can muster, show the committee that distribution costs are what they are because "the customer is always right," and because American business wants to give consumers what they want, when they want it, and the way they want it.

LETTERS

Mr. Pond Is Now Properly Identified

Refrigeration & Industrial
Supply Co., Inc.
422 South Seventh St.
Minneapolis, Minn.

Editor:

I noted in your post convention issue of AIR CONDITIONING & REFRIGERATION NEWS that you had my name listed as a member of the board of directors of the National Refrigeration Supply Jobbers Association as connected with the Vincent Brass & Copper Co. of this city.

I have received a lot of kidding about this and wish you would make a correction in your records.

FRANK R. POND, President

Editor's Note: We're glad to make this correction for the record, and our face is as red as the long underwear worn by the residents of Minnesota's Twin Cities.

The Line Forms To The Right

Nakoma Mink Ranch
Rt. 1, Wentworth, Wis.

Editor:

I was recommended to your publication through the courtesy of Popular Mechanics.

I am anxious to build a 20-30 ton sharp freezer and small chill room, in which to store meat and fish over long periods of time. If you could put me in touch with several wholesale refrigeration firms where I might be able to purchase plans and materials for an outfit of this size, I would be greatly indebted to you.

HARVEY A. RONSON

Another Man Wants To Place an Order

North American Supply Corp.
39 Cortlandt St.
New York, N. Y.

Editor:

We are interested in securing the names and addresses of manufacturers of household refrigerators who are willing to manufacture their product under our own trade mark for sale in the various export markets.

We are especially interested in manufacturers who make comparatively low priced products. Any information you can give us will be greatly appreciated.

G. E. PAYE

Chinchilla Ranch

3340 Mayfield Ave.
San Bernardino, Calif.

Sirs:

Enclosed please find check for \$2.25 for 20 (more or less) copies of your News of Jan. 10, identified as Vol. 29, No. 2, Serial No. 564. Please send the number of copies this check will cover.

I think that your article about Mr. Graef's Chinchilla Ranch is very fine and have several requests for copies.

RALPH BLAKE

Servel Executives Point Out Present Markets For Commercial Systems

(Concluded from Page 1, Column 1) rendering of swift, satisfactory service—coupled with a varied, intelligent and aggressive sales organization.

"Terry" outlined the side of the story wherein a distributor or salesman blames imaginary rackets for his business failure, when the real reason was in a lack of recognition of conditions in the industry and the inability to conduct a sound and effective specialty sales operation.

He showed how it is often true that "the calamity-howler's so-called racket of today becomes the accepted practice of tomorrow."

RACKETS IN BUSINESS

In summarizing "do's" and "don't's" in consideration of rackets versus business profits, he outlined the following points:

1. Don't lower yourself or your operation to the level of the real "racketeer."

2. Study your operating costs and cut deeply on every item that is unnecessary overhead or unproductive operation.

3. Don't think you have to make every sale to make an overall profit, when prices on any particular sale go below your established minimum profit level.

4. Realizing that COST is a factor in the prospect's mind, don't ever lose sight of selling a service and not a price and that cost and price are two very different things.

5. Keep alert for changes in the industry and keep your operation tuned to these fundamental changes year by year.

A YARDSTICK TO APPLY

6. Differentiate the "racket" from a legitimate business profit deal by using the following yardstick:

(a) Does it violate basic and long proven credit practices?

(b) Does the competitive merchandise meet with your own standard of new equipment specifications?

(c) Is adequate service properly covered?

(d) Does the reputation of the competitor and the prospect justify honest comparison?

(e) Do your own net costs of merchandise and operating costs meet the real competitive situation?

(f) Is your sales presentation effective in giving the prospect the whole and the true story?

NEW APPLICATIONS

Within the past few years the uses to which refrigeration has been applied have extended to many types of installations scarcely dreamed of previously, Paul Reed, service manager, stated in his discussion of "Control Specialties."

This has been highly beneficial to the commercial distributor, as it enables him to increase the scope and volume of his business without added overhead, he said.

Many of these new applications call for rather special treatment, particularly as regards the controls, in order to obtain the results desired.

Ability to handle these "off-the-beaten-path" jobs gives the distributor a reputation in his community as a specialist in refrigeration and this prestige tends to bring business to him due to confidence in his ability to handle even the tough ones.

BETTER CONTROLS

Also, some developments have been made in controls for the ordinary case and cooler or other comparatively simple installation that give better control of cooling and humidity and enable the customer to vary the temperatures as he may see fit, Mr. Reed said.

"It is easy to get into the habit of choosing the machine for an in-

stallation by a rough mental estimate of horsepower, based on previous similar installations of the same type," said Service Manager Reed.

"The trouble is that very few installations are just alike and there frequently is some condition on a particular installation that makes a great deal of difference in the size and type of machine to be used.

"It is far better to make the correct selection at the time of the sale and installation than to have to go back and make correction at added expense that was not allowed for in the original price."

Then too, Mr. Reed pointed out, there are occasional jobs on which there is a variation in load from season to season, week to week, or even hour to hour. These must be given special consideration and demand the use of methods of balancing machine capacity to the load either manually or automatically as that particular installation requires, he said.

DIVERSIFICATION

Speaking on the subject "The Man Who Wasn't There," H. F. Bell, district manager, urged distributors to cover the various phases of the diversified market—not to be "the man who wasn't there" when sales are made which afford extra profit and less competition.

On the subject of beer and beverage cooling, Mr. Bell urged distributors to take advantage of the sales helps offered by their local breweries and beer distributors.

Pointing out that such companies are vitally interested in having their products palatably served, Mr. Bell said:

"Acquaint these concerns with the beer cooling products you sell and install, and your experience in this line." He advised distributors to sell complete beer cooling systems.

"Where you quote on the refrigeration equipment only, you are making only one part of a sale. Tavern owners today are interested in new equipment that will mean greater profits from their beer sales. Sell some device such as a faucet or dispenser having an exclusive feature."

BOTTLING PROFITS

Mr. Bell reported that sales of refrigeration equipment for water cooling to bottling plants had shown an increase the past year, from reports received from distributors.

Pointing out the increased profits possible through sales of such cooling equipment, Mr. Bell stated, "the average bottler realizes the necessity of having the right equipment and considers this fact first, and price is secondary. Competition is usually limited, thereby eliminating price cutting."

The potential market existing in apple storage was brought out by Mr. Bell in reporting the activities of Servel distributors in this field. An immediate survey of the market was suggested to distributors who had not been going after this type of business.

Covering the subject of locker storage, he pointed out that while most of these installations are found in the Midwest, greater public interest is now observable in the East and South in this type of storage.

COUNTER FREEZERS GAIN

The increase in sales of counter freezers the past year indicates that it isn't difficult to interest the drug and candy store owner in making his own ice cream, he said. Small dairies and roadside restaurant owners are other good prospects.

Mr. Bell then spoke on the market existing with newspaper companies, doctors, dentists, hospitals, and com-

mercial photographers for cooling chemicals and in developing pictures and X-ray plates.

An interesting chart was exhibited covering a recent survey made of 56,340 markets. A result of this survey showed that of the total lineal feet of refrigerated display case now in use by this market—

31.1% was 10 years old or older.

29.2% was 5 to 9 years old.

39.8% was 1 to 4 years old.

Mr. Bell pointed out that it was logical to assume that the 31.1% or 332,449 feet of display case 10 years or older would be replaced by new equipment. This, plus the new stores opening up each year, makes for a potent market, he said.

The sales of vegetable display cases to small meat and grocery stores have shown a large increase the past year. Manufacturers of this type of case look forward to much greater increases in such sales and distributors were advised to cash in on this rapidly growing market.

Sperzel, Dornheim, Jackes Join Buensod Firm

NEW YORK CITY—J. M. Sperzel, G. A. Dornheim, and Herman Jackes have been added to the staff of the Buensod-Stacey Co., air conditioning dealer here.

Mr. Sperzel is a graduate engineer of the Stevens Institute of Technology who has been employed in the last six years by the operating department of Rockefeller Center, Inc.

Mr. Dornheim, a specialist in air conditioning and piping work, had previously been employed by the Thompson-Starrett Co., and later by the department of hospitals for the City of New York.

Mr. Jackes, at one time sales manager of the Aerofin Corp., will be a specialist in coil surface design, and in the design of industrial and commercial heating systems.

Chicago Stores Buy Air Cooling In Jan.

CHICAGO—Sixteen air conditioning jobs were sold by distributors and dealers in the Chicago area during January, according to reports to Commonwealth Edison Co. Five of the sales were room coolers, two for doctors' and dentists' offices, two for private offices, and one for residential use.

Retail stores led in installations for the month, with four, largest of which was a 50-ton system in the Three Sisters women's wear store at 6132 S. Halstead. Three restaurant jobs during the month were topped by the 60-ton system in the Harmony cafeteria at 15 S. Wabash. Biggest installation was a 200-ton system in the Strauss building, 310 S. Michigan.

Following is a classified list of central plant installations made in January:

Hospital	1
General Offices	3
Restaurants	3
Retail Stores	4
Total	11

N. Y. Farm Electricity Use Doubles In 10 Years

ALBANY, N. Y.—Number of farm users of electricity in New York state has more than doubled in the past decade, the state public service commission reports.

Since 1930, when the commission began its program of rural electrification, 17,000 miles of new lines have been added to the 19,100 lines existing at that time. Number of electrified farms has increased from 43,300 in 1930 to 97,000 in 1940. Approximately 57% of the state's farm homes now use electric current.

Detroit ASRE To Hear Capillary Tube Talks

DETROIT—The history and application of capillary tubes will be the subject of a round table discussion by the Detroit Section of A.S.R.E. Feb. 29 at the Lee Plaza hotel here. D. P. Heath, president of the local group, will report on the national convention held last month in Chicago.

Speakers at the February meeting will be Frank R. West, consulting engineer of Detroit, who will talk on "The History of Capillary Tubes," Earl Huvacher, research engineer, Norge Corp., who will discuss "Capillary Tubes as Applied to Domestic Refrigeration," and D. P. Heath, who will treat the "Use of Capillary Tubes in Commercial Refrigeration."

Efforts are being made to secure an additional speaker to discuss the patent situation relating to capillary tubes.

R. A. Adams To Represent Pleasantaire In Michigan

DETROIT—R. A. Adams Co., 9440 Dexter Blvd., has been appointed district representative in the state of Michigan for Pleasantaire room coolers, manufactured by Pleasantaire Corp., Washington, D. C.

R. A. Adams is head of the company, with Richard F. Mears and Fred T. Anderson as assistants on sales.

Jersey Norge Distributor Has New Showroom

NEWARK, N. J.—Norge Sales Co. of New Jersey, factory branch, has leased showroom facilities at 78-82 Central Ave.

REFRIGERATION DEALERS!

STOCK UP NOW...

with GENUINE

FRIGIDAIRE
Precision-Built Parts

● When you use Genuine Frigidaire Precision-Built Parts, it's easy to give fast, dependable service that wins customer good-will and confidence. That's why it pays to depend on your Frigidaire Distributor for the parts you need. Because there are 49 Frigidaire distributing points in the U.S.—your Distributor is near you. He carries a complete stock—everything you need is readily available. And all Genuine Frigidaire

Precision-Built Parts have passed the same rigid inspection as new, assembled Frigidaire equipment.

Find the location of your Frigidaire Distributor on the list to the right. Simply address correspondence: FRIGIDAIRE (Name of city). Ask for your copy of the "Parts" catalogue. Check catalogue for prices—stock up now on Frigidaire replacement parts and be prepared when the busy season starts! Fill your needs now.



Check this list for location of YOUR Frigidaire Distributor

Akron, Ohio
Albany, N. Y.
Atlanta, Ga.
Baltimore, Md.
Billings, Mont.
Birmingham, Ala.
Boston, Mass.
Buffalo, N. Y.
Chicago, Ill.
Cleveland, Ohio
Dayton, Ohio
Denver, Colo.
Des Moines, Ia.
Detroit, Mich.
El Paso, Tex.
Ft. Worth, Tex.
Hagerstown, Md.
Houston, Tex.
Indianapolis, Ind.
Jackson, Mich.
Kansas City, Mo.
Los Angeles, Cal.
Louisville, Ky.
Memphis, Tenn.
Miami, Fla.
Nashville, Tenn.
New Castle, Pa.
New Orleans, La.
New York, N. Y.
Norfolk, Va.
Oakland, Cal.
Oklahoma City, Okla.
Omaha, Nebr.
Peoria, Ill.
Philadelphia, Pa.
Pittsburgh, Pa.
Portland, Ore.
Roanoke, Va.
Rochester, N. Y.
St. Louis, Mo.
St. Paul-Minneapolis
Minn.
Salt Lake City, Utah
San Antonio, Tex.
Seattle, Wash.
Sioux City, Ia.
Spokane, Wash.
Syracuse, N. Y.
Tampa, Fla.
Wichita, Kan.
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District Sales Offices: Baltimore, Boston, Charlotte,
Chicago, Cleveland, Kansas City, Newark,
New York, Philadelphia, Pittsburgh, San Francisco

What's Wrong (If Anything) With This Picture of the Air Conditioning Business?

One Man's Suggestions on Where & How To Get It.

In this article G. C. Murray tells how to operate an air conditioning distributorship on a capital of \$50,000, using 11 women canvassers and 45 salesmen to sell 686 heating and 650 cooling units which, together with wholesale business, will make a gross volume of \$771,392.85 and a net profit of \$166,223.32.

That is the way Mr. Murray has it figured out, but perhaps some readers of the NEWS, who have tried a similar operation, will point out flaws in the calculations.

In any event, his plan and his figures should be stimulating and helpful—Editor.

By Robert M. Price

DETROIT—Can satisfactory profits be made in selling residential air conditioning and heating? The answer is a definite "yes," according to G. C. Murray, who spent some 30 years in automobile merchandising and who spent the last two years in the cooling and heating business as a manufacturer's field man. In that time Mr. Murray made a detailed study of the market potential, worked out cost and personnel problems, and came up with a plan that he feels will point the way to profits for distributor and dealer.

Creative selling and merchandising are key points in Mr. Murray's selling plan. He advises the distributor and dealer to throw overboard the idea of conducting a cooling and heating business along contracting lines, and instead to adopt creative selling, highlighting the prospect's need for the product.

The only way to erase the red ink from an air conditioning business ledger, says Mr. Murray, is to take on lines of heating, such as conversion gas and oil burners, stokers, and such allied lines as attic ventilation and insulation.

FINDING THE MARKET

Where's the market? Mr. Murray has an answer for this one, too. He prepared a prospectus of the residential heating replacement market and the potential unitary air conditioning market for the city of St. Louis. Figures were taken from a study made by Owens-Illinois Glass Co. which points out that one out

of every four homes is in the market for replacement of heating equipment. The survey can be used as a market "yardstick" in any community, Mr. Murray holds.

Taking the survey figure of 141,061 dwellings in St. Louis, Mr. Murray takes 5% of the "one out of four" potential market for heating replacements for his quota for a distributor. The quota is established at 686 for the year. In the trading area outside the city the quota is fixed at 5% of the 12,384 estimated to have central heating plants, or 155, bringing the total to 841 as a quota for the year.

Quota for cooling equipment is fixed at 650, including 175 year-around units and 475 cooling units. Wholesale quota adds 45 year-around units and 125 cooling units to be sold. Total for area is 820.

Mr. Murray is convinced that the American buying public really want economical healthy comfort, and are willing and able to pay for it. What is needed to sell this cooling and heating comfort, he says, is proper presentation of the products, plus an organization that will go out and sell the desired features. He states that he has found but few organizations which are following that course.

'GO AFTER THE BUSINESS'

Sales efforts of most of the firms Mr. Murray contacted were concentrated on contacting the architects and builders from whom they derived from 15 to 30% of their business. On the average, they just about

broke even on this business, Mr. Murray claims.

Majority of the business came from telephone service calls which turned into new unit sales when the service customer found that it was more economical to scrap the old equipment. This replacement business is where the heating men made their money, according to Mr. Murray's findings.

If this profit business literally "came to the distributor and dealer," why not try creative selling and go out and sell heating and cooling, Mr. Murray reasoned.

WOMEN CANVASSERS

First step in his plan is to find the names and addresses of past purchasers of heating equipment, find the make and year of installation of the equipment, and so get a line on what equipment can be replaced or new equipment sold. To do this most easily and effectively, Mr. Murray proposes to use women canvassers between the ages of 30 and 45.

Why use women instead of men or salesmen? Mr. Murray explains that women canvassers have a much better chance of getting in homes at any time of day. Use of salesmen, he says, reduces their closing ability to a marked degree. Also the cost of using salesmen for this work is high in comparison to the cost for women canvassers.

Women canvassers would be supplied with cards listing the questions to be answered and would fill out these cards while looking over the heating equipment and while interviewing the prospect. Cards would be turned over to the sales manager at the end of each working day.

"Naturally," says Mr. Murray, "these women canvassers will have to be trained in their work before they are allowed to make any contacts. After training, they should be sent into a district where it is reasonable to suppose that residents have either the money or credit to pay for the merchandise, and where central heating has been in use for

seven years or more."

The canvassers should average 165 cards a week, Mr. Murray says, and he estimates that 25% of these would be live prospects, some of them for service jobs. Canvassers, he says, should be given a two or three weeks start on retail salesmen to insure enough live prospects for the salesmen to work on from the time they start out.

The sales organization must be put under a fully competent sales manager, Mr. Murray emphasizes, this manager to keep close check on the work of salesmen and to train and assist them in making and closing sales. "Half-cocked salesmen through lack of product and selling knowledge can kill more good sales in a day than a good salesman can close in a week," Mr. Murray says.

Dealer contact man in Mr. Murray's proposed distributorship is one who has the necessary qualifications to meet and interest the proper type business man in a franchise, be able to sign him up, and then to organize the account so that in future contacts the dealer will have confidence to follow suggestions and directions to the degree that proper sales volume will be attained and net profits achieved.

'CREATIVE SELLING'

"There is nothing new in successful creative selling," Mr. Murray admits, "and the organization set-up I have outlined has been and is still being used by practically every organization doing a volume business, organizations whose products do not have the public acceptance of summer-winter air conditioning. The public has been forced to go into the open market to buy summer-winter air conditioning, and in the very great majority of cases buyers must expose themselves to the merchants in the business. They have not even been paid the compliment of a personal contact, nor asked to buy.

"Caution your salesmen," continues Mr. Murray, "not to use technical terms or phrases because the average

return on sales for a year. These figures are based on the survey made in St. Louis and trading area.

QUOTAS AND PROFITS

Summarizing how to reach the market in the area, Mr. Murray presents these figures:

Canvassing	
No. of homes to contact.....	141,061
No. calls per day per woman	30
No. calls per year per woman	8,250
No. of women canvassers required	11
Salesmen	
No. of retail units to be sold.....	686
Average number sales per man per year...	30
No. salesmen required.	23
Total salesmen required	45

How to reach wholesale market: Dealer contact man.

Figuring average f.o.b. retail price of heating units at \$342.50, and wholesale price at \$239.75, Mr. Murray adds installation and service costs, including \$10 for delivery and handling, \$5 for service, \$1.25 for parts, and \$200 for sheet metal work, bringing the total dollar volume for 841 units sold to \$420,466.25.

Average f.o.b. retail price for cooling units is figured at \$401.40, and wholesale price at \$280.98. Installation and service costs for each cooling unit sold is figured at \$10 for delivery and handling, \$5 for service, and \$50 for installation. Total dollar volume of the 820 units sold amounts to \$350,926.60. Amount for retail units is \$260,910, for wholesale units, \$47,766.60, and for service and installation, \$42,250.

Gross profit on heating equipment is figured at \$147.27 for retail sales, and \$44.52 for wholesale sales. Gross profit on installation and service is figured at \$10 for delivery and handling, \$5 for service, 40 cents for parts, and \$50 for sheet metal work. Total gross profit on heating equipment sold amounts to \$152,405.40.

Average gross profit on cooling equipment is figured at \$172.60 per retail unit sold, and \$52.18 per wholesale unit sold. Gross profit on installation and service is figured at \$10 for delivery and handling, \$5 for

(Concluded on Page 13, Column 1)

Canvassers' 'Calling Card'

Canvasser's Name	Date of Call
Resident's Name	Address..... Phone.....
Owner's Name	Address..... Phone.....
Make of Heating Unit.....	Serial No.....
Type: Boiler.....	Furnace..... Is Blower Used? Yes..... No.....
General Condition: Good.....	Fair..... Poor.....
Fuel Used: Gas..... Oil..... Coal.....	Make of Burner or Stoker:.....
General Condition of Burner or Stoker: Good.....	Fair..... Poor.....
What is User's Opinion of Heating Results Obtained: Good... Fair... Poor...	
Cost of Heating Last Season:.....	Is Any Change Contemplated? Yes.. No..
Is House Insulated? Attic: Yes..... No.....	Side Walls: Yes..... No.....
What Make and Type:	
Is an Attic Fan Installed: Yes..... No.....	Is it Satisfactory: Yes..... No.....
What Make:	Size:
Is Any Summer Air Conditioning Installed: Yes..... No.....	
What Type: Central Station:	Room:
Window:	Hp.:
What Make:	Is it Satisfactory: Yes..... No.....
Is Resident Interested in Installing Insulation: Yes..... No.....	
An Attic Fan: Yes..... No.....	Summer Air Conditioning: Yes..... No.....
Central Station.....	Room..... Window.....

CLEANLINESS

You get it in WOLVERINE TUBING

WOLVERINE TUBE CO. DETROIT

Another Market for CURTIS Refrigeration

CURTIS EFFICIENCY
Means LOWER COOLING COSTS

Curtis Condensing Units are cutting costs and increasing profits for milk dealers throughout the world—for Curtis units offer highly efficient operation plus long life and trouble-free performance.

Curtis units, as well as all Curtis refrigerating equipment, are quality built throughout. Proven design, careful workmanship and precision manufacturing standards are apparent in every detail.

Curtis equipment assures you exceptional efficiency together with low operating and maintenance cost. There's a silent, vibrationless Curtis condensing unit to exactly balance your requirements, from 1/6 to 30 h. p., air or water cooled.

To be sure of satisfaction, specify CURTIS every time. See your nearest Curtis representative or write for free bulletin, "Cooling Milk at a Profit."

CURTIS REFRIGERATING MACHINE COMPANY
1951 Kienlen Ave. St. Louis, Mo.
Builders of Condensing Units Since 1922

... and How CURTIS Advertising Helps You!

The advertisement reproduced at the left is an example of Curtis advertising regularly appearing in *Milk Dealer*, a publication that every month reaches thousands of milk plant owners and executives, plus many suppliers of equipment in this field.

Here is only one of many markets for Curtis refrigeration equipment that you can sell profitably; and which Curtis helps you to sell by advertising regularly in these markets, featuring Curtis products and Curtis quality.

Curtis Condensing Units meet all milk cooling requirements, from farm or dairy cooling to units for use on refrigerated trucks. Models are available from 1/6 to 30 H. P., air and water cooled, and gasoline power can be furnished if desired.

You can meet all refrigeration demands of this profitable market with the complete Curtis line. Write for full information today on this and other markets.

CURTIS REFRIGERATING MACHINE CO.
Division of Curtis Manufacturing Co.
1912 Kienlen Ave. St. Louis, Mo.

prospect does not know the meaning of 'B.t.u., c.f.m., etc.'"

Mr. Murray advises salesmen to talk air conditioning. "Talk the product. Talk health, economical, effortless comfort."

How far would an automobile salesman get with a prospect if he talked "transportation," Mr. Murray wonders.

In pricing the product, Mr. Murray advises that an average price for different sized homes be arrived at in order to allow the salesmen to close while the prospect is "hot." He says that all such orders, however, should be subject to check by an engineer and officer of the firm.

Should the dealer or distributor set up a sheet metal and fitting shop? Very definitely, in the opinion of Mr. Murray. A well equipped shop keeps equipment purchasers in close touch with the firm, he says, producing profitable service jobs and at least two or three live prospects per year from each purchaser.

"Without a properly equipped shop, properly manned, you make a gift of your owners to competition," Mr. Murray says.

With that general outline of his plan for aggressively merchandising summer-winter air conditioning equipment, Mr. Murray gets down to actual figures on operating expense for his proposed distributorship, and also gives an approximation of gross

IT'S 1-2-3 WITH PEERLESS

1 DEPENDABLE PERFORMANCE
365 days a year—NO HOLIDAYS... PEERLESS PRODUCTS are KNOWN throughout the industry for their DEPENDABILITY.

Everything in "LOWSIDE" Equipment

2 APPEARANCE
STYLED FOR 1940... Modern Design at its best. Designed for convenience as well as appearance.

Everything in "LOWSIDE" Equipment

3 QUALITY
Behind the pleasing appearance of all PEERLESS PRODUCTS is BUILT-IN QUALITY. That is why their performance is as excellent as their appearance.

Everything in "LOWSIDE" Equipment

FOR DEPENDABLE PERFORMANCE BUY PEERLESS QUALITY

See Your Jobber for 1940 Catalog

PEERLESS of AMERICA, Inc.
Midwest Factory, General Offices—
515 W. 35th Street, Chicago
43-20 34th Street, Long Island City
3000 South Main St., Los Angeles, Calif.
2218 N. Harwood St., Dallas, Texas
Export Div., P. O. Box 636, Detroit, Mich.

How To Make \$166,000 In Home Conditioning

(Concluded from Page 12, Column 5)
service, and \$5 for installation.

Total gross profit on sale of cooling equipment is figured at \$134,060.60, of which \$112,190 is realized on retail sales, \$8,870 on wholesale sales, and \$13,000 on installation and service. Total number sold is fixed at 820 units.

What will it cost to get this business? asks Mr. Murray. He presents his suggested schedule of fixed and variable expenses and totals his expense and overhead as follows:

Fixed Expenses—Overhead	
Rent	\$ 2,400.00
Manager	5,000.00
Bookkeeper	1,800.00
Stenographer	1,500.00
Sales Manager	3,600.00
Dealer Contact Man.	2,400.00
Traveling Expense	1,200.00
Advertising	11,854.00
Engineer	2,400.00
Installation and Service	1,800.00
Mechanic	1,500.00
Stenographer (sales)	1,200.00
Light and Power	200.00
Water	100.00
Heat	200.00
Insurance	1,000.00
Miscellaneous	2,000.00
Total Fixed Expenses	\$ 40,154.00
Variable Expenses	
Sales	59,503.80
Canvassers	11,284.88
Service	9,300.00
Total Variable Expenses	\$ 80,088.68
Total Expense and Overhead	\$120,242.68

Arriving at the net profit from the operation, Mr. Murray presents these figures:

Gross Profit	
Sales (retail)	\$213,217.20
Sales (wholesale)	15,771.20
Installation & service	57,477.60
Total Gross Profit	\$286,466.00
Total Overhead and Expense	120,242.68
Total Net Profit	\$166,223.32

Proposing a working capital of \$50,000, and showing a total net profit of \$166,223.32 with total sales volume of \$771,392.85, Mr. Murray establishes the net profit on working capital at 332% and the net profit on total sales volume at 21%.

Theater Replacement Job Shows Big Savings

CHICAGO—Saving one-third to one-half in operating cost was obtained when the Kroeschell Engineering Co. recently replaced the 15 year old CO₂ air-conditioning plant at the State Lake theater, Chicago, by a new system incorporating the most advanced engineering developments.

This is one of the first big modernizations of its sort in the West and holds particular significance to both the air-conditioning and theater industries.

In the new installation the four 40-ton Westinghouse condensing units total but 160 horsepower, 200 square feet of floor space, and weigh 10 tons. The previous two 100-ton CO₂ refrigerating machines required 250 horsepower, 1,000 square feet and weighed 83 tons without foundations.

The new system operates in synchronism with the box office, units being automatically turned on and off to match the relative number of people in the theater.

Each of the hermetically sealed condensing machines has its individual evaporator unit to equalize loading and simplify operation. The machines work in conjunction with copper finned cooling coils and a bank of filters. The condensing units do not require foundations; in fact are so vibrationless that they are not even fastened to the floor.

Conditioning Sales Hit 'Big Money'

WASHINGTON, D. C.—Making a rapid rebound from a rather dolorous 1938, orders for air conditioning equipment booked by U. S. manufacturers during 1939 totaled \$53,744,899 to put the industry back in the "big money," according to statistics compiled by the Bureau of the Census.

Indication of just how sizeable were the gains registered by the industry during the past year is a comparison of orders booked by 125 U. S. companies who reported sales for both years. In 1939, these companies did a volume of business totaling \$33,219,165, as compared to \$19,704,404 in 1938.

Self-contained equipment led the field in volume for the year on the cooling side, with orders totaling \$4,474,338. Of this amount, units between 1 and 5 hp. accounted for \$2,133,178. Under under 1 hp. reported orders amounting to \$1,561,289, with those above 5 hp. registering \$779,871.

In the central station equipment for cooling, systems for human comfort had orders totaling \$3,275,175, with industrial systems adding another \$116,814 to this total.

Human comfort applications also led the year-around air conditioning classification, with orders totaling \$2,187,030, while industrial systems amounted to \$901,268.

On the winter air conditioning side, orders totaling \$12,838,512 were reported with warm air furnaces being responsible for another \$17,255,298 in volume. Air conditioning equipment for use with existing heating systems had a volume of \$231,696 during the year.

Sales of condensing units for use in air conditioning systems totaled \$5,159,766, with large size units (50 hp. and up) accounting for \$2,271,273 of this amount. Units from 1 to 10 hp. showed orders of \$972,397, and those from 10 to 25 hp. amounted to \$900,769.

Lake Water Used For Precooling & Condensing

SYRACUSE, N. Y. — Use of Onondaga lake water for air pre-coolers and subsequently in refrigerant condensers is expected to result in operating economies of the air conditioning system recently completed in the new Church & Dwight Co. factory here.

The lake water, which reaches a temperature of 40° F. or less in winter and seldom more than 65° in summer, is first supplied to pre-cooling coils and then circulated through refrigerant condensers. Control of the system is arranged so that when cooling is required, as much as possible is done with the precooling coils. This results in a considerable power saving.

During April, May, and June, it is planned to use lake water exclusively, while in the remainder of warm weather water and mechanical refrigeration will be used. Cold water from Lake Onondaga will be used at the rate of 600 g.p.m.

Automatic humidity controls maintain a correct balance between the mixture of inside and outside air. During certain seasons of the year, when the outside air is at the desired temperature and humidity, the system will use 100% fresh air. Dry filters were used on the installation.

Value of Orders For Air Conditioning Equipment Booked By 267 U. S. Manufacturers During 1939

Air conditioning systems primarily for summer use:

Systems for installation in room or rooms to be conditioned:	
Self-contained:	
Up to and including 1 hp.	1,561,289
Over 1 hp. up to and including 5 hp.	2,133,178
Over 5 hp.	779,871
Not self-contained, same as above, excluding refrigerating unit.	1,198,498
Central station systems complete (including cost of installation, if to be installed):	
For human comfort	3,275,175
For industrial use	116,814

Year-around air conditioning central station systems (including cost of installation, if to be installed):	
For human comfort	2,187,030
For industrial use	901,268

Air conditioning systems primarily for winter use:	
Complete units, including furnace, blower, air cleaner, humidifier, and control equipment	12,838,512
Warm-air furnaces, for sale separately	17,255,298
Air conditioning unit, for use with steam or hot water boiler, consisting of heat transfer coils, air cleaner, blower, humidifier, and control equipment	231,696

Component units of air conditioning systems (other than furnaces) for sale separately:

Refrigerating or cooling units for sale for air conditioning systems:	
Under 1 hp.	273,551
1 hp. and over but under 10 hp.	972,397
10 hp. and over but under 25 hp.	900,769
25 hp. and over but under 50 hp.	741,276
50 hp. to and including 100 hp.	2,271,273
Over 100 hp.	2,271,273

Condensers:	
Shell and coil or shell and tube	95,152
Evaporative type	441,160
Heat transfer coils and coils for direct expansion	2,003,043
Units consisting of heat transfer coils, air cleaner, blower, humidifying & dehumidifying equipment, but excluding heating and cooling units	1,079,343
Circulating unit consisting of blower and filter	482,487

Air filters for sale separately (sale of filters used with machinery other than fans are not included):	
Automatic self-cleaning filters	29,206
Medium resistance non-automatic filters	136,235
Low resistance non-automatic filters	48,534
Other	34,882

Air washers, including pumps and motors and control where furnished....	585,070
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Humidifiers:	
Human comfort type:	
Independent unit not for use with air conditioning apparatus.....	77,449
Unit for use with air conditioning apparatus.....	328,092
For industrial use (textile mills, etc.)	766,251

Total	\$53,744,899
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'Rex' Vernon Talks on Temperature Control

BUFFALO—J. R. (Rex) Vernon, advertising manager of Johnson Service Co., Chicago, was guest speaker at a recent meeting of the Western New York chapter of American Society of Heating & Ventilating Engineers in the University club here.

Mr. Vernon discussed "Automatic Temperature Control for Air Conditioning Systems," illustrating his discussion with slides. Lawrence P. Saunders, president of the chapter, presided.

Mr. Vernon pointed out that automatic temperature control is the "brain" of the air conditioning system, without which there would be waste and dissatisfaction.

He then described the numerous types of control devices, governing both temperature and humidity.

Artemus E. Ward Joins New York Firm

NEW YORK CITY—Artemus E. Ward has been admitted as a partner in the firm of Cheney and Foster, engineers and consultants, with offices at 61 Broadway here.

For the past 25 years Mr. Ward has been connected with W. S. Barstow & Co. and with the Utility Management Corp. He has had over 30 years' experience in sales promotion work, accounting, management, and financial work, specializing in air conditioning and appliances.

He has often appeared as a speaker before conventions and other gatherings of appliance dealers.

The firm of Cheney and Foster handle valuations, original cost studies, rates and rate cases, cost analyses, financial and economic studies, property records, investigations, and reports.

"JUST BETWEEN
US TWO — make
the test — install
ROTARY SEALS on your
next few jobs. You'll find
them efficient time savers
and money makers!"



ROTARY SEAL HAS PIONEERED IN THE MANUFACTURE
OF MECHANICAL SHAFT SEALS. BECAUSE OF THIS
SPECIALIZATION IT OFFERS THE BEST IN SHAFT SEALING.



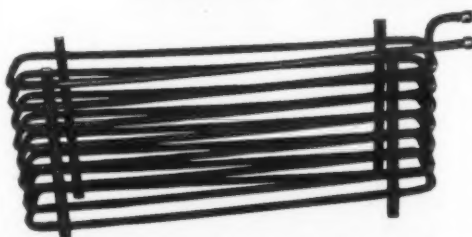
ROTARY SEAL COMPANY

803 West Madison St. • Chicago, Ill.

Canadian Office: 382 Victoria Avenue, Westmount, Montreal

Continental European Office: Waldorstraat 52, Den Haag, Netherlands

FIN COILS by REMPE PIPE COILS by REMPE



REMPE CO., 340 N. Sacramento Blvd., CHICAGO

REMPE KNOWS!
ask REMPE

You can depend on Rempe coils for the kind of results you want, because we pack years of sound, dependable experience in them. Don't experiment — trust experience.

Tenn. Farmers Move To Take Over TVA Plant

CLEVELAND, Tenn.—Nucleus of a frozen food cooperative association was formed here recently by farmers from five Tennessee counties who met for the purpose of planning some means of operating the quick-freezing plant constructed three years ago by the Tennessee Valley Authority and the University of Tennessee.

The cooperative type of management was recommended by TVA authorities, who pointed out that the plant had passed the experimental stage and now should be operated by the farmers themselves.

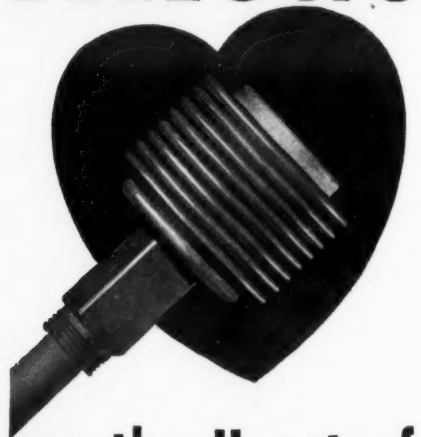
A temporary committee of five members was named to prepare an application for a cooperative charter and work out details of the organization. Chairman of this committee is S. N. Varnell, the Bradley county dairyman who operated the plant last year on a TVA lease.

Land & Contracts Set For Hoopeston, Ill. Plant

HOOPESTON, Ill.—Land has been purchased here and contracts let for a building to house a 320-locker cold storage plant to be operated by W. E. Guest & Co.

In accordance with this company's policy, the Hoopeston plant will have complete facilities, including lard rendering, meat curing, and fruit and vegetable freezing. A public waiting room also will be provided.

SYLPHON BELLOWS



are the Heart of Good Thermostatic Valves...

SAYS FEDDERS

Sylphon
SEAMLESS
METAL BELLOWS AND
THERMOSTAT ASSEMBLIES

In Fedders Thermostatic Valves you'll find Sylphon Bellows... for both thermostatic power elements and packless glands. Tests in this manufacturer's own laboratory showed Sylphon Bellows to have 17 times the life of ordinary diaphragms. Actual service in Fedders valves, operating under all manner of conditions, has substantiated laboratory findings.

Why not profit from experiences such as this? Why not do as so many manufacturers in the refrigeration industry are doing... use Sylphon Bellows to replace short-lived diaphragms and troublesome packed joints, for thermostatic power elements, etc.

For details of this seamless, jointless, time-tested "Miracle in Metal" write for Bulletin DO-511.

THE FULTON SYLPHON CO.
KNOXVILLE, TENNESSEE

Representatives in All Principal Cities in U. S. A. and in Montreal, Canada and London, England

'Look Before You Leap'... Into the Locker Business, Advises Bulletin Prepared By Alabama School

AUBURN, Ala.—Follow the accepted rules of sound business procedure if you are planning on building a locker plant, urges a bulletin issued recently by the extension service of Alabama Polytechnic Institute under the supervision of P. O. Davis, director.

To help guard against ill-considered investments in the locker storage business which is developing so rapidly in the southern states, this bulletin suggests that every prospective locker plant builder first take the following steps:

(1) Make a survey of the community in or near which the plant is to be built to determine the need for such service and the possible number of year-around users.

(2) Secure and analyze all available information on construction plans, materials, costs, and operating procedure.

(3) Weigh the advantages and disadvantages of individually owned plants and plants connected with some other business.

(4) Estimate income to be derived.

(5) Calculate operating expenses.

Estimated Income & Expense Account For 200 Locker Plant

Income:	125	Lockers Rented 150	175	200
Rental @ \$12	\$1,500.00	\$1,800.00	\$2,100.00	\$2,400.00
Processing* (400 lbs. @ 1½¢)	750.00	900.00	1,050.00	1,200.00
Grinding, Seasoning, Etc.				
(15% of Meat Stored @ 1½¢)	112.50	135.00	157.50	180.00
Brokerage for Purchases (10% of Meat Stored @ ½¢)	25.00	30.00	35.00	40.00
Estimated Total Gross	\$2,387.50	\$2,865.00	\$3,342.50	\$3,820.00
Expenses:				
Butcher-Manager @ \$1,200	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00
Light and Power @ \$65 Per Month	700.00	725.00	750.00	780.00
Water	70.00	75.00	80.00	85.00
Taxes and Insurance	200.00	200.00	200.00	200.00
Depreciation				
\$5,500 Building and Insulation @ 5% ... \$275				
\$2,000 Refrigeration and Butcher Equipment @ 10% ... \$200	475.00	475.00	475.00	475.00
Supplies, Repairs, Etc. @ \$1.00 Per Locker	125.00	150.00	175.00	200.00
Total Estimated Operating Expenses	\$2,770.00	\$2,825.00	\$2,880.00	\$2,940.00
Gross Income	\$2,387.50	\$2,865.00	\$3,342.50	\$3,820.00
Net Income	—382.50	40.00	462.50	880.00
Return on Investment	—5.1	.5	6.2	11.7
Interest Imputed @ 5%	375.00	375.00	375.00	375.00
Net Return Above Interest	—10.1	—4.5	1.2	6.7

The various items in these estimates were arrived at by a study of operating statements and balance sheets of plants operating throughout the country (giving more weight to those plants in Tennessee and Alabama), and by conferences with refrigeration engineers and representatives of credit institutions. Obviously, composite figures do not apply to any specific plant. Each plant presents a different set of conditions which will be reflected in construction and operation costs. However, these estimates are thought to be reasonable, and should be of help in determining the relative expenses in operating a locker plant.

*Does not include salt curing, smoking, lard rendering, or service income other than on quick-freeze meats.

Profits and Economy Call For MASTER

Easy To Install . . . Easier To Sell

LOOK over a Masterbuilt Food Storage Locker and you'll realize how much better Refrigerated Lockers can be. You'll appreciate their sturdy construction and finish . . . their flexibility of installation . . . how they protect against dehydration and provide the utmost in Sanitation.

Once you do this you won't be satisfied with any locker but the

Masterbuilt HydroLoc

Completely Individual Locker

No frames or racks to assemble with bolt ends to snag packages or hands . . . no air wipe . . . easily removed from stack for cleaning outside cold room . . . erection costs reduced up to 75% due to ease of assembly—takes only a few minutes outside of cold room.



Send For Full Particulars

Whether you buy or sell Food Storage Lockers you will want complete facts. Write or wire for them today.

Masterbuilt Lockers are endorsed and sold by distributors of refrigeration and insulation.

MASTER REFRIGERATED LOCKER SYSTEMS, Inc.
121 Main St. Sioux City, Iowa

Over 125,000 Masterbuilt Lockers in Use

Refrigerator Popular With Farm Folks

WASHINGTON, D. C.—Electric refrigerators are the fourth most popular appliance on REA lines, ranking behind hand irons, radios, and washing machines, according to a recent survey which has just been made public.

The survey, covering the experience of 50,295 customers on REA lines through July, 1939, shows the following percentages of saturation:

Hand irons	84.2
Radios	82.4
Washers	58.9
Refrigerators	32.3
Toasters	31.0
Vacuum cleaners	21.3
Ranges	3.1
Roasters	1.7
Milk coolers	0.7
Dairy water heaters	0.3
Motors, 1 hp. and up	2.3
Motors, under 1 hp.	18.2

Household refrigeration has shown a steady growth in popularity, the survey reports. In January, 1938, it was reported by only 25.6% of the farm homes from which returns were received. In the July, 1938 study, the figure had grown to 30.1%, and now stands at 32.3% in the latest report.

The South led in use of refrigeration, reports from projects there showing ownership of 42.4%. Lowest in saturation were projects in the Northeast, with 24%, while the North Central section reported ownership of 29.1% and the West was almost identical with the overall average, with 32.4%.

The Northeast provided the best market for vacuum cleaners and toasters, with about four out of 10 members reporting ownership of both of these appliances. North Central section was foremost in ownership of washers, cream separators, and small motors. Almost eight out of every 10 households in this section had electric washers.

The West led in electric range and roaster use, as well as in coffee makers and hotplates.

Average of 10.9 months experience with electricity was reported by customers replying to the survey. Some of the projects which had reported in the January, 1938 study, however, showed noteworthy increases in appliance ownership. Refrigeration saturation ratios on these older projects jumped from 21.9% in January, 1938 to 39.3% in July, 1939.

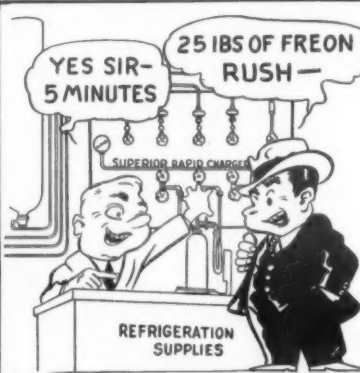
Chromalox Sales Points Outlined For Manual

PITTSBURGH—Sales manual on the advantages of Chromalox surface cooking units for electric ranges has been published by Edwin L. Wiegand Co., exclusive manufacturer of the units, to help salesmen tell a more convincing story to their prospects.

Construction details of the units are given in the manual, steps in the manufacture of the units are illustrated, and comparisons given with other methods of cooking as well as with competitive types of electric range surface units. Sales helps, such as visualizers and demonstrators, also are outlined.

Three Rivers To Get First Locker Plant This Year

THREE RIVERS, Mich.—The first cold storage locker plant in this part of Michigan will be opened here about Sept. 1 by A. L. Jones, who plans a 300-unit locker installation in a three-story building he has purchased. Work of installation is to be started April 1.



Superior RAPID-CHARGERS . . .

Hi-Speed Refrigerant Transfer Systems.

Five pounds per minute by actual test!

No more loss of valuable time—Rapid-Charger is fast!

No more waste of expensive refrigerants. . . Rapid-Charger eliminates purging!

No more heating of large cylinders . . . Rapid-Charger makes heating unnecessary.

The Superior Rapid-Charger solves all the problems of transferring and charging refrigerants—safely, efficiently and economically.

Ask your Jobber for Bulletin R11

SUPERIOR VALVE & FITTINGS COMPANY
500 THIRTY-SEVENTH STREET - PITTSBURGH, PENNA.
Export Department: 100 Varick Street, New York, N. Y.

Trained EXPERTS FOR HIRE

IN AIR CONDITIONING

Select your man-power with the same care you exercise when buying equipment. Men graduated from America's largest refrigeration and air conditioning training shops really know their business. They have been thoroughly grounded in both theory and practice by experts with years of experience in the field. Every type of trained man available—heating, cooling, air conditioning, for installation and service work, or application and sales.

engineering. Many have had years of experience before taking training. Write and tell me the kind of man you want. I will send you the names of several, especially selected to meet your individual needs, with a frank statement as to their ability. Let me help you as I have helped other employers. No charge to anyone for placement service. Address: George L. Candler, Personnel Director,

INDUSTRIAL TRAINING INSTITUTE
2130-2158 Lawrence Avenue, Chicago, Illinois

Expansion Valve Often Wrongly Blamed For Other Faults In Refrigeration System

DETROIT—Expansion valves are often blamed for difficulties in the refrigeration cycle which may lie much deeper, and authorities on service work have pointed out that when the valve does not respond to adjustment, the service man should not report "defective valve" until a thorough analysis has been made of the entire system, to determine if the right sizes of equipment have been correctly applied.

A case in point is a recent situation in a system installed here; the service man is called to adjust a system in a cold storage room where minus 10° F. temperatures are maintained by 1½-in. pipe coils powered by a 1½-hp. "Freon-12" compressor.

After the system was put in operation it would not run, although the heat load on the room was very small, brought about by excellent insulation, together with the fact that all produce was frozen before it was placed in the room. Diagnosis of the contractor making the installation was "defective expansion valve."

An analysis of the system showed that several mistakes had been made in the application of refrigeration to the cold storage room. The first was overcoiling. The job contained 514 ft. of 1½-inch pipe, more than enough to keep the room at the desired temperature. This pipe could hold 118 lbs. of "Freon-12," when it was about one-third full, on the basis of .23 lbs. of refrigerant per foot.

The job had been over-charged with refrigerant. While the coils could hold 118 lbs., the condenser-receiver on the 1½-hp. compressor had a capacity of 38 lbs. of gas. The job had been charged by means of a gauge—until the head pressure was between 110 lbs. and 120 lbs.

Had it been charged during the

summer time, or in a warm room, the expansion valve would have stood open and allowed refrigerant to pass into the coil as fast as it was fed to the system. About 80 lbs. of "Freon" had been placed in the system before the head pressure reached the desired point.

When the system was placed in operation, it operated until the condenser-receiver was full and at this point some 40 lbs. of refrigerant remained in the evaporator, due to the combination of over-coiling and over-charging. Enough liquid was present to keep the thermal bulb from operating the expansion valve and permitting the system to run. The compressor would only operate long enough to suck refrigerant vapor out of the coils and when this vapor was compressed and condensed, it filled up the receiver.

At this point, the system stopped on head pressure. The receiver was full and a great deal of refrigerant remained in the coil. The simple expedient of placing the warm hand on the thermal bulb opened the expansion valve, reduced the head pressure, and permitted the compressor to operate.

An analysis of this system showed that the job was over-coiled and over-charged, but the compressor manufacturer (or his representative) did not check with the evaporator manufacturer and provide an adequate receiver for the system.

When a large receiver was installed so that the compressor could pump down all of the refrigerant from the coils and complete the cycle, the system operated in a satisfactory manner, without further changes. In this instance the same result could have been obtained by reducing the amount of coiling used.

Kelvinator 'Farms Out' Service In Baltimore

BALTIMORE—Reliable Service Co. has been appointed authorized factory service and installation representative for Kelvinator and Leonard refrigerators and other Kelvinator appliances.

The company, which is headed by Harry S. Eklof, with Charles Eklof as service manager, has moved to larger quarters at 1501 Guilford Ave., where about ten times its former floor space is available.

The Kelvinator branch has discontinued doing its own service work, and has turned this over to Reliable Service Co., which has purchased most of the branch's servicing equipment, including sprayers, dehydrating ovens, charging equipment, etc. This is said to give it one of the best equipped shops in the city.

In addition to Kelvinator and Leonard equipment, Reliable Service Co. also is factory service outlet here for Easy washers, and for Apex refrigerators and major appliances.

Vacuum Cleaner Men Combine To Sell Repair Service

MILWAUKEE—Twelve local firms are using cooperative newspaper advertising to sell bonded repair service on all makes of vacuum cleaners. The service includes free call-for and delivery service and during the repair period, a new cleaner is left with the customer for her use.

Dealers offering the service include the Brill Furniture store, Gitzell's Furniture & Appliance store, Goldman's Department store, Klode Furniture Co., J. Kornely Hardware Co., Kosciuszko Furniture store, Pasch Radio Stores, Inc., Rades Paint & Hardware Co., J. H. Singer Co., Whitefish Bay Hardware Co., AbenMcNutt Furniture Co., Atlas Good Housekeeping Shops, and Fitzgerald Hardware.

Here's One Use For Old Refrigerator Cabinets

BIRMINGHAM, Ala.—What becomes of old refrigerator cabinets?

Mrs. W. D. Bankston, who with her husband operates the West End Radio Co. here, has converted one old cabinet into a filing cabinet and safe for service tickets. Painted a deep green, to match other office furniture, the cabinet is an open filing case by day and at night with its door closed provides fireproof protection for the records.

Old radio cabinets, the store has found, can be converted into excellent desks, doll cradles, etc. for children, or magazine or what-not stands for the home. Mr. Bankston has made and sold a number of such items, in addition to providing plenty of playthings for his four-year-old daughter.

O. E. Petri Named Head Of St. Louis RSES

ST. LOUIS—O. E. Petri has been elected president of the St. Louis chapter of Refrigeration Service Engineers Society for 1940. Other officers are: L. C. Haney, vice president; E. A. Plesskott, secretary-treasurer; L. L. Vollman, sergeant-at-arms; and E. Gyax, educational committee chairman.

Named to the board of directors of the chapter were: William H. Dieckmann, E. C. Fix, A. H. Huhn, and H. B. Menaugh.

Air Conditioning Dept. Opened By Lasalle & Koch

TOLEDO—Lasalle & Koch department store has announced the opening of a new air conditioning and heating department, with W. P. Ries as manager.

Part-Time Workers Get Part-Time Compensation, Wisconsin Court Rules

MADISON, Wis.—Of interest to appliance dealers is the ruling by the Wisconsin supreme court that part-time employees can be compensated in case of injury only on the basis of the time they are actually employed.

The test case, carried to the high court by the state industrial commission after an adverse decision in the Dane County circuit court, for the first time definitely clarifies the meaning of the "full time employment" term used in the workmen's compensation law.

The case, regarded as of great importance because of possible effects upon liability insurance rates, involved a Janesville store which regularly works its employees five days per week, but the claimant in the action was on a three-days-per-week basis.

It was contended that the employee was entitled to compensation figured on the usual five-day working week maintained by the store, and the state industrial commission agreed in this interpretation.

Appealed to the Dane County circuit court, the commission's ruling was reversed. The court held that compensation is properly calculated on actual working time of the individual employee, and not on the usual standard working week maintained by the company for its regular employees. The state supreme court sustained the circuit court's decision.

Glyptal Resin Output To Be Increased 50%

SCHENECTADY, N. Y.—Production of Glyptal resin will be increased approximately 50% after March 1, when additional manufacturing equipment will be put in operation at General Electric's Glyptal alkyd resin plant here.

The new units, like those now in operation, will be electrically heated to facilitate control which in turn helps to insure uniformity of the product. New equipment is made of stainless steel, and includes pipe lines, stirrers, auxiliary kettles, reflux condensers, and valves. This is the fourth expansion since 1932, when the company first began to manufacture alkyd resins for sale.

Laminated Shim Building New Plant At Stamford

LONG ISLAND CITY, N. Y.—Laminated Shim Co., manufacturer of Laminum shims, shim stock, and small stampings, has started erection of a new plant at Stamford, Conn. The new building will be a one-story structure of about 30,000 sq. ft. floor area, with provision for manufacturing space and general offices. It is expected to be completed in June.

Need for additional space is the major reason back of the move, say company officials, with another being the desire to get as near as possible to their source of raw materials.



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You'll See a Lot More of These Window Air Conditioning Installations In 1940



Part of the installation of 100 Pleasantaire window-type room-cooling units now being carried out in a downtown Washington, D. C. apartment building. Use of room coolers in the Capitol city's famed Shoreham hotel last summer is said to have stimulated interest among building operators.

SERVICE MEN AND DEALERS —GET SET FOR A BIG 1940!

Get set to make real profits out of the better business that is ahead. But, be sure you build solidly. Now, while you have the time, decide what you will use and where you will buy . . . and before you decide—

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Kelvinator is a name that your customers know and respect. It is your assurance that the guarantee of every item in the Kelvinator Refrigeration Supplies Line will be maintained. Add the prestige of this name to your own business.

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Kelvinator Refrigeration Supplies cost you no more. Many unequalled items such as the all-purpose, Stainless-Steel Evaporators, Compressors, Oil Separators, and Heat Exchangers actually cost less than ordinary lines.

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MODEL 153
Water-cooled

What's New

Descriptions of some of the brand new items for the refrigeration and air conditioning, and major appliance fields.

A-P Filter Available In Three Sizes

Designed to provide increased operating efficiency of expansion or solenoid valves is the new series 408 "Trap-it" introduced to the trade recently by the Automatic Products Co.

Its purpose is to trap all impurities such as water, scale, gummy deposits, and particles of solder. It contains nothing that can dissolve, and, according to the manufacturer's claims,



prevents many of the causes for sticking or slow-acting valves which can often be traced to sources other than the valve itself.

At the present time the unit is available in three sizes. The small size is furnished with a 1/4 or 3/8 inch S.A.E. male flare inlet and outlet connection and is suitable for installations of 1 ton. The medium-size, which is also available with the 1/4 or 3/8 inch inlet and outlet connections, will handle 2 tons of refrigeration; while the larger sized unit is adequate for systems up to 4 tons and is available with 3/8 or 1/2 inch S.A.E. inlet and outlet connections.

These recommendations for size are based on the use of "Freon-12." The "Trap-it" unit will handle twice the amount of refrigeration where methyl chloride or sulphur dioxide is used.

The filtering element is held in place by a centering cup and a strong, non-corrosive spring. The element itself is a specially wound bobbin of coarse processed cotton yarn of soft texture. The individual strands of the bobbin overlap so as to present a materially increased absorbing area to moisture and filtering surface for any foreign matter that enters the system. The yarn is wound around an open metal core and forms a honeycomb of diamond-shaped filtering tunnels as a result of the overlapping. It is of uniform density throughout.

For insertion of the element, the body shell is constructed in two pieces which are atomic hydrogen welded, and tested against a pressure of 200 lbs. The inlet and outlet fittings are atomic hydrogen welded to the body shell. These welds are tested for 400 lbs. The shell is constructed of cold rolled steel and attractively painted for protection against rust.

The pressure drop through the "Trap-it" is said to be zero. It can be installed any place on the refrigeration system. The most favorable installation, however, is the use of the unit directly on the valve itself. A connector fitting is available to

facilitate this type of installation on almost all types and makes of valves. General wrench grips and flare-type inlet and outlet connections make installation both quick and easy.

General Purpose Blower For Air Conditioning

BOSTON—An improved general purpose blower for ventilating, air conditioning, and fume exhaust work has recently been developed by the B. F. Sturtevant Co. Known as Rexvane Vent Sets, these fans are of the centrifugal type with direct connected motor. Central feature is the radial blade fan rotor which permits higher rotative speeds, lower outlet velocities, and more dependable balance when handling air which contains grease or solid particles.

Cone shaped inlets guide the entering air to the rotor with a minimum of shock and turbulence and a consequent reduction in noise, it is claimed.

Nine sizes of Rexvane units are available with rotors ranging from 6 inches to 24 inches in diameter. Air handling capacities range from 250 c.f.m. to 6,000 c.f.m. at 1/4-inch static pressure.

'Spiral-Fin' Tubing Is Introduced By Chase

New in Chase Brass & Copper Co.'s line for 1940 is "Spiral-Fin" tubing, made by a patented process and constructed to give the fins greater strength and the tube and fins better heat transfer capacity.

As its name suggests, Spiral-Fin tube has the fins spiraled around the tubing. The fins are cut in long continuous lengths from thick-wall tubing, and each fin is smooth and flat, no wrinkles being present to collect moisture or dirt which cut down the rate of heat transfer, it is claimed.

Besides the usual edgewise fit, the fins are reinforced at the tube contact by two wires that are wound around the tube and the base and on both sides of each fin. With this extra bonding, it is claimed, fins are not apt to separate from the tube or change their position with respect to each other.

Wire binding the fins to the tube forms a larger contacting surface between the fin and the tube, it is claimed, increasing the capacity of the fins to transfer heat to or from the tube, so that lighter gauge fins may be used.

By varying the height and spacing of the fins, the ratio of primary to secondary surfaces can be adjusted to suit various operating conditions, it is claimed.

The tubes are made of standard seamless copper tube sizes ranging from 1/4 to 1 1/4 inches outside diameter, and the fins are made from 1/4 to 3/8 inches in height, inclusive, and in thicknesses from .008 to .020 of an inch. Maximum over-all diameter in which the tubing can be furnished at present is 2 1/4 inches, and fins can be spaced from 4 to 8 to each inch of tube. Either all tin-coated copper or plain copper fin with soldered joint can be supplied.

In its display at the All-Industry Show, the company showed an enlarged section of the Spiral-Fin

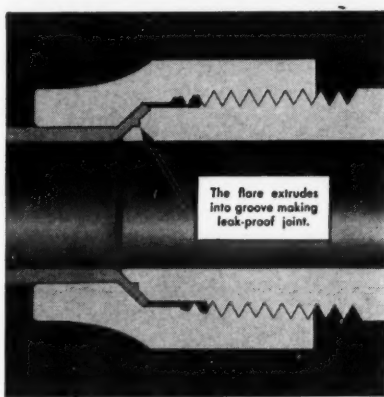
tube on a revolving drum with small figures spotted at various points to call attention to specific features.

Also shown were copper tube and wrought fittings for air conditioning, hot pressed forgings, refrigerant tubing, flared type fittings for refrigeration use, and copper headers for heating units.

New Imperial Fitting Has Grooved Seat

CHICAGO—A new flare fitting, called the "triple-seal," which, it is claimed, will remain leakproof even when its seat has been badly nicked or marred, has been introduced by Imperial Brass.

New fitting is said to be identical



Groove incorporated in seat of fitting

to the standard SAE refrigeration-type brass flare fitting, except that it is made with a groove in its seat. When the flare is drawn up against this groove, the copper tubing is extruded into the groove, making a self-sealing joint.

This joint will remain leakproof, it is claimed, even though the face of the fitting may have been badly damaged. Use of the groove results in three distinct seals being formed, it is asserted. Face of the fitting on each side of the groove forms two of the seals, while the third or safety seal is formed by the groove itself.

All Imperial flare fittings for refrigeration and air conditioning purposes manufactured in the future will have this "triple-seal" feature.

New Peerless 'Zero Pad' Uses 1-4-Inch Plates

CHICAGO—A new type of cold plate known as the "Zero Pad" has been announced by Peerless of America, Inc. Like other cold plates, this new product is adaptable to a wide variety of uses, with emphasis on low-temperature applications.

Formed by two sheets of metal welded together with spacer strips in between to form the refrigerant passage, these Zero Pads are only 1/4-inch thick. This thinness is said to assure a high rate of heat transfer for the volume of gas used.

No secondary surface or tubing is employed, as the sheets of metal that contain the refrigerant are also the surfaces of the plates. The plates are of all-steel construction so that any refrigerant may be used.

After fabrication, the plates are finished by metalizing, a process of

spraying molten metal onto the surface, which makes the final product impervious to rust and corrosive action and able to withstand all kinds of service in the field, it is claimed.

Uses listed by Peerless for the new Zero Pads include both high and low-temperature truck refrigeration, locker plant applications, storage boxes, wrapping tables, display cases, salad counters, window displays, and replacement equipment for old soda fountains and ice cream cabinets.

Built-In Control Added To Carrier Unit Heater

SYRACUSE, N. Y.—To the Carrier standard unit heater has been added a new built-in control to provide day and night settings of temperature. Automatic heat control is afforded by a hydraulic action bulb type thermostat which has a 60° adjustable range.

This adjustable setting provides for comfort heating during the day and tempered heating at night for

protection of plant materials and equipment. Control is built-in at the factory.

Special setting for fan operation during the summer is designed to insure positive air circulation. Two cords, one black and the other white, are provided to make selection of day and night settings easy.

'Electric Eye' Outfit For Experimental Use

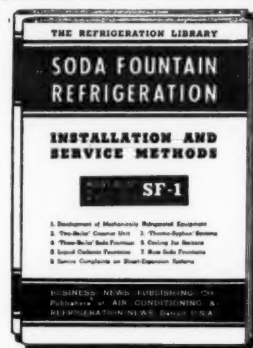
CHICAGO—To popularize the use of photo-electric (electric eye) equipment among manufacturers and other potential users, Rehtron Corp. has developed a photo-electric and capacity relay experimental set to sell for \$17.50 net.

With the set is a 24-page instruction book which describes many practical applications and industrial experiments. Idea is increase the commercial use of this type of equipment by making available to technicians a low cost unit to experiment with.

SODA FOUNTAIN REFRIGERATION

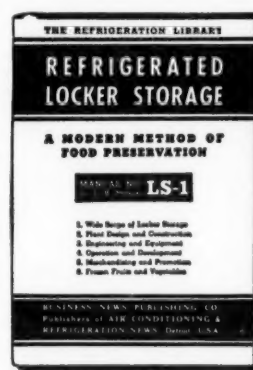
By Arch Black and Dean C. Seitz

A set of two new manuals that every service man will want. Installation and service instructions on mechanically refrigerated soda fountains.



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Manual SF-2 Contents: Chapter 9—Bastian-Blessing Fountain with Frigidaire Water Cooler. Chapter 10—Service Complaints and Remedies on Instantaneous Coolers. Chapter 11—Brunswick Fountain with Temp-rise Instantaneous Cooler. Chapter 12—Accessory Fixtures Multiplexed to Soda Fountains. Chapter 13—Condensing Unit Sizes—Basic Calculation Principles. Chapter 14—Carbonator Construction, Operation, Service Problems. 96 pages. \$1.00.



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Wall-Type Diffusers In Anemostat Line

NEW YORK CITY—Announcement of a new high velocity air diffuser, the wall Anemostat type W, has been made by Anemostat Corp. The new outlet is claimed to introduce cooled or heated air from a side wall to any conditioned space without draft. Operating principle is similar to the ceiling type Anemostat. The wall Anemostat consists of a series of diverging semi-elliptical



flaring members placed one within the other. The face of the device is mounted flush with the wall.

Installed in connection with an air handling system, the new unit converts air, traveling at relatively high velocities, into layers or blankets moving at a variety of angles to each other. Aspirating action of the device draws in 35% room air as it operates.

Room air is mixed with air flowing through the duct causing a rapid stabilization of temperature in the conditioned space. Characteristics of the wall Anemostat are said to enable the designer of the air conditioning system to use higher outlet velocities and greater temperature differentials between the supply and room air. The high velocities employed make smaller, less expensive ductwork permissible.

Advantages offered by the new wall Anemostat are: draftless air diffusion and low velocity air turbulence throughout the enclosure; elimination of stagnant air pockets; even temperatures; high outlet velocities, permitting a reduction in the number of outlets, and higher temperature differentials.

Engineering tables for the wall Anemostat contain a number of limitations and restrictions which have been established for the guidance of application engineers. Basically the unit is centered in the long wall of an area having a length one and one-half times its width—or distance across.

Finish is sprayed aluminum.

Perlick Cooler Gives Customer a 'Look-In'

New feature of the bar dispensing equipment line of R. Perlick Brass Co. is a visible top direct draw bar unit, utilizing a glass top plate so that the bar customer may look into a tile-lined air shaft and see the beer lines running directly from the storage keg.

The glass top of the unit is hinged and is made of shatter-proof glass 1/4-inch thick and separated from the bottom glass by a layer of captive air. The air shaft has three lines, which may be had in glass, and no coils are utilized in the direct draw system.

The cooler shaft is insulated with

corkboard, lined in white "Marlite" tile, and finished with stainless steel moulding. The top plate is framed with stainless steel set into the glass panel and is said to prevent leakage and condensation forming between the glasses.

The system is designed so that the air shaft extends below floor level into a walk-in cooler in the basement. The blower fan is contained in the bottom of the shaft. An air regulator assembly for use in the system is included in the equipment offered.

For use where the beer faucets are within 10 feet of the beer storage, the company offers an air-cooled direct draw system. In this system the cold air from the pre-cooler is circulated with a small blower through 4-inch air ducts leading to the tapping box. Balanced restriction lines of block tin lead to connectors and fittings. The pre-cooler temperature is kept at 36° to 38° F. and beer can be drawn, it is claimed, at 40 to 42° F.

Feature of the system is an adjustable cooler-to-floor insulation housing. Legs on the tap box are also adjustable so that the unit may be set at the required distance from the floor line.

For use when it is necessary to draw beer a distance from the pre-cooler, a system using refrigerated beer lines is available. The refrigerated line is assembled at the Perlick factory and the connection is made by cutting a 6-inch hole in the floor and in the walk-in cooler. The unit is flexible so that it can be formed to any angle desired.

The refrigerated beer line housing on this unit consists of a flexible metal tube to which are soldered the refrigeration tubes. The assembly is wrapped with hair felt, sealed with insulating tape, and waterproofed to prevent any moisture from accumulating in the assembly.

The company also makes walk-in coolers for use with the beer dispensing systems. The coolers are made in three types. First type has fir beaded ceiling and is insulated with "Palco" wool; the second type comes with matched fencing and Palco wool; and the third type has matched fencing, 4-inch corkboard insulation, and is constructed of kiln-dried lumber. The walk-in coolers are shipped knocked down, and a blueprint is furnished for easy assembly.

Clock-Thermostat New With M-H

MINNEAPOLIS—A new Chronotherm clock-thermostat, known as Model T-111, has been announced by Minneapolis-Honeywell. Price of the new instrument, which will operate in connection with any M-H series 10 primary control, is said to be lower than that of the company's previous units of this type.

The new Chronotherm, which contains a heat accelerated series 10 thermostat, automatically lowers the temperature at any desired time of day or night. With the new unit, Minneapolis-Honeywell engineers claim an overall saving of 10% of the annual fuel bill can be effected.

The control has a self-starting electric clock with direct reading numerals; coordinated temperature indicator and thermometer in parallel; Da-Nite time recycling which permits manual setting of temperatures desired at any time; sealed-in oil mechanism; and a simplified wall mounting plate.

Standard operating range is 56° F. to 84° F. Dimensions of the new Chronotherms are: height, 3 1/2 inches; depth, 2 1/2 inches; width, 5 1/4 inches. Finish is silver bronze.

Styling & Price Changes Made By Eureka

DETROIT—Reduced prices and refinements in styling characterize floor model vacuum cleaners in the Eureka line this year.

Price of the Model G-30 is now \$34.95 cash, or \$29.95 and the old vacuum cleaner; GL-30, with searchlight, is \$3 higher; Model R-40 is priced \$49.95, or \$39.95 and the old cleaner; and Model M-60 is now \$68.75, or \$58.75 and the old cleaner.

All three models also have new style bags made of a special weave, heavier and more substantial, and with a higher degree of porosity which lets the air through in great

volume but retains the dust. New bag top opens wider than the former one, and is easier to empty. A stay in the mouth of the bag gives it stiffness and makes it easier to open.

Bag for the G model is done in green, the R model in blue, and the M model in maroon. All three cleaners have new modernistic nameplates in colors to harmonize with the bags. All former technical features are retained in the new models.

Quarter-Turn Regulates Nordco Gauge Cock

PITTSBURGH—Lubricated type of gauge cock which can be completely opened or closed with a quarter turn, for test pressures up to 4,000 lbs., has been developed by engineers for



Merco Nordstrom Valve Co. The gauge cock has a rated working pressure for water, oil, and gas of 2,000 lbs.

Body of the unit is forged steel, and it has a stainless steel plug. Stick lubricant is inserted under a lubricant screw, which can be turned down. Special lubricants are available for steam. The unit is made in 1/4 and 3/8 inch sizes, and is wrench-operated.

Roper Rotary Pumps Handle 1 To 1,000 g.p.m.

ROCKFORD, Ill.—A new line of rotary pumps has been introduced by the George D. Roper Corp. The line includes pumps of from 1 to 1,000 g.p.m. capacities at speeds up to 1,800 r.p.m. and against pressures up to 1,000 lbs. per square inch.

At present, 21 different drives and mountings are available, ranging from ordinary foot, hub, and flange mounting heads to complete bedplate units for direct motor drive, gear reduction, flat or V-belt drive.

Claimed as a feature of the new pumps is "hydraulic balance," which is said to equalize internal pressure at all points and to absorb all shock or thrust from power end of drive shaft. Other features include a choice of spiral, spur, or herringbone gears; conventional packing box, spring loaded packing box, or mechanical seal; sleeve or roller bearings; built-in or external relief valve; and eight different piping arrangements.

Plated Aluminum Sheet For Industrial Use

PERU, Ill.—Plated aluminum sheet in nickel or chromium finishes has been made available for industrial use by American Nickeloid Co.

These new metals consist of surfaces of pure nickel or chromium bonded to an aluminum base. They

are designed for use as trim, moulding, accessories, or for any product that requires use of a lightweight, workable, corrosion, and wear-resistant metal.

Pre-finished, the metals require no plating, polishing, or refinishing, it is claimed, and can be stamped, formed, bent, and moderately drawn into various shapes without harming their existing finishes. Both metals are available with either bright or stain finish, and in sheets from 24 to 36 inches wide and 96 inches long, in gauges from .010 to .0625 inch.

Eskin Heads Research Lab for Robertshaw Thermostat Co.

PITTSBURGH—S. G. Eskin has been appointed director of Robertshaw Thermostat Co.'s new research laboratory here. He formerly was chief engineer of American Thermostat Co., St. Louis, and most recently was research engineer of Edison General Electric Appliance Co., Chicago. He has had wide experience with proper temperature problems covering both electrical and gas appliances.

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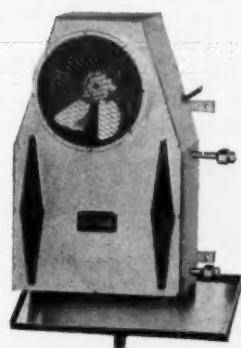
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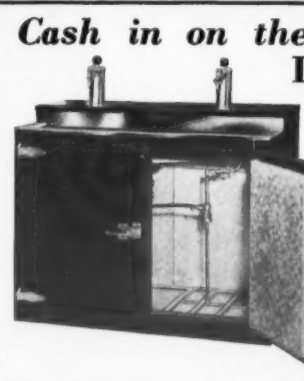
YOUR "on-the-counter" Belt Department!

Gilmer's "Eye-ful" Tower MERCHANDISER and HANDMETER

earns almost \$1.00 on the 15" circle it occupies! Costs only \$19.36. You get \$33.28 and make \$13.92 clear profit!

L. H. GILMER COMPANY
For Details Write to: Tacony Philadelphia

Cash in on the swing to DIRECT DRAW DISPENSING EQUIPMENT!



The entire line of Perlick Direct Draw Dispensers that has pioneered in the field and won the favor of beer retailers everywhere, is available to Refrigeration dealers, to broaden their market and increase their profits. Dispensers are sold with or without compressor, but complete with evaporator and tapping equipment. Many models and styles—all thoroughly engineered and constructed. Write for complete information and prices, without obligation.

R. PERLICK BRASS CO.
IN MILWAUKEE

MAKE BIGGER PROFITS



TYLER full line dealers and distributors are setting new records for sales and profits. Tyler's big line enables you to completely outfit modern food stores and opens up hundreds of live prospects in other fields. Famous Welded Steel construction. Phenomenal values. Display Cases... Reach-In... Walk-In... Vegetable Displays... and special type refrigerators to fit all needs. New 1940 line now ready. Write for details.

TYLER FIXTURE CORP., Dept. E, Niles, Mich.
New York Office: 801 W. 76th St.
Boston Office: 683 Beacon St. Chicago Office: 1863 W. Ogden Ave.

REACH-IN BOXES—40% greater capacity.

TYLER WELDED STEEL Refrigerators

Chieftain Chapter 3

THE HERMETIC STORY

THE CHIEFTAIN HERMETIC IS OUTSTANDING IN:

1. Quietness of Operation
2. Efficiency of Operation
3. Minimum Field Service.

WRITE FOR THE FULL STORY
TECUMSEH PRODUCTS CO., TECUMSEH, MICH.
Canadian distributor: Refrigeration Supplies Co., Ltd., London, Ontario

Westinghouse Awarded War Dept. Contracts

WASHINGTON, D. C.—The U. S. War Department has just awarded Westinghouse Electric & Mfg. Co. contracts covering its electric water heater and range requirements for the first half of the fiscal year.

An estimated 1,400 water heaters will be included in this contract, divided equally between 40 and 60-gallon sizes. These heaters are of the automatic electric storage type, with Monel tanks, two Corox units, and individual thermostats.

The ranges are of the automatic electric type with four enclosed surface units.

Both water heaters and ranges will be used in various army posts in continental United States and U. S. possessions.

Dishwasher-Disposal Due for 'Big Push' This Year

G-E Planning Major Campaign To Bring Them Out of 'Luxury' Class



Here's the new G-E sink, combining both dishwasher and Disposall, which will get its first "big league" promotional tryout this year. Ease, economy, and efficiency with which they do "housekeeping's two most disagreeable jobs" will keynote the campaign, aim of which is to take these appliances out of the "luxury" class and put them into the "household necessity" bracket.

BRIDGEPORT, Conn.—With lower prices, fewer models, and a backlog of installation facts and user experience gained from the last few years, the General Electric sink and its component appliances—the dishwasher and the Disposall—this year is being moved into a far more important position in the company's home appliance set-up.

For in 1940 G-E will launch its first major campaign on behalf of these devices, in an attempt to move them out of the "expensive luxury" class and start them on the road to a public acceptance just as complete as that won for the electric refrigerator during the past decade.

Emphasis in this campaign will be placed not on the appliances themselves, but rather on the ease, economy, and efficiency with which they handle housekeeping's two most disagreeable jobs—dishwashing and garbage disposal.

Substantially, one dishwasher, one Disposall unit, and one sink combining the other two appliances compose the 1940 G-E line.

The dishwasher is available as a free-standing individual cabinet in white baked glyptal enamel, or as an appliance to be installed in existing sinks. Units for use in this latter application are available to match porcelain or linoleum work surfaces, or in brushed metal finish for Monel or stainless steel work tops.

Only one model of the Disposall unit is available. This unit is applicable to any G-E sink or to existing stainless steel or porcelain cast iron sinks by enlarging the drain opening. A white glyptal finished steel cabinet is available for locations where the Disposall would otherwise be exposed.

A single new model of the G-E sink, incorporating both the dishwasher and the Disposall, completes the line. The sink is finished in white baked glyptal enamel with white porcelain top and can be used as a free-standing cabinet or installed adjacent to work surfaces or cabinets.

Sink bowl, rim, and back-splash are of one-piece seamless steel construction. Doors under the sink are equipped with spring-action hinges. A removable waste basket is mounted on one of these doors and a utility bin is welded on the other.

Harry M. Williams Now NCR Vice President

DAYTON, Ohio—Harry M. Williams, formerly with Frigidaire and a past president of American Society of Refrigerating Engineers, has been elected vice president of engineering and research of the National Cash Register Co. For the past two years he has been director of research.

Pioneer manufacturers of Extended Surface Coils

McQuay, Inc.
Minneapolis, Minn.

Easy Washer Appoints BBDO As Ad Agency

SYRACUSE, N. Y.—Easy Washing Machine Corp. has appointed, Batten, Barton, Durstine & Osborn, Inc. to handle its advertising and sales promotion, reports J. J. Nance, general sales manager. The account will be handled by the Buffalo office of the advertising agency.

Finned Tube Products
Since 1907 for COOLING, HEATING and AIR CONDITIONING
Bush Mfg. Co. Hartford, Conn.

HOTEL WOLVERINE

Comfort at the Wolverine means more than just its excellent accommodations. An atmosphere of congeniality and friendliness is ever-present within this famous hotel, making each guest feel the warmth of home—in the courteous service of trained employees and in the hospitable attitude of the management.

500 ROOMS \$150
WITH BATH from \$1.
ELIZABETH ST. EAST
AT WOODWARD AVE.

DETROIT



N. Y. Court Ruling Cuts Cost Assessments In Time Payment Cases

ALBANY, N. Y.—A utility or appliance company doing an installment business may not attach costs against a customer in default under \$50, Justice Francis S. Bergan of the New York Supreme Court ruled in a case in which the Servap Co. and its assignee, Universal Purchase Corp., sought to have Jesse Rivett, Hudson Falls, N. Y., declared in contempt of court.

Justice Bergan found that although the amount demanded and recovered by the dealer and finance company was \$39, costs were attached in the sum of \$91.65, making a total of \$130.65. Judgment for this amount was granted in 1935.

The court ruled that action of the plaintiff in adding the costs violated Section 1472 of the Civil Practice Act, which provides that no costs shall be allowed in an action for a sum of money unless the plaintiff shall recover \$50 or more. "It would seem, indeed, that the defendant was entitled to costs in the circumstances," Justice Bergan declared.

Attorney for Mr. Rivett said that his client's troubles began back in 1929, at which time Mr. Rivett admitted owing the company \$32, but not \$39, which they claimed. He argued that his client had paid well for the \$39 claim, having paid nearly \$100 in addition to the amount of it over a period of 10 years—to say nothing of the annoyance or inconvenience he had been put to.

Philco Stages Preview Of 3 New Developments In Television Operation

PHILADELPHIA — Three new achievements in television research, described as "important steps forward in solving television's fundamental problems," were announced here recently by William H. Grinditch, vice president in charge of Philco engineering laboratories, at a special showing attended by radio and science news writers from New York City, Washington, D. C., and Philadelphia.

These three Philco advances were described by Mr. Grinditch as:

(1) Improved television picture of 605 lines instead of the present 441 lines, thus providing an increase of 30% in picture detail. This new 605-line picture has 24 frames per second in accordance with standard motion picture practice.

(2) Plug-in television with reception based on vertical wave transmission permitting built-in vertical loop antennas.

(3) Use of the built-in loop antenna to reduce diathermy and noise interference, one of television's most vexing problems.

WHAT THEY MEAN

To the public, Mr. Grinditch said, these advances will mean a better television receiver at lower cost. But he warned that television was still in the laboratory, that it was not yet as reliable as present-day radio broadcasting. One big problem yet to be solved, he pointed out, is the development of a better, simpler, stronger, and more reliable synchronizing system to prevent picture slippage.

Going into more detail on the advantages offered by the Philco achievements, Mr. Grinditch explained that the 605-line, 24-frame television picture might make practical the projection of television images on a large screen, an achievement not feasible with the 441-line screen now in common use.

The built-in vertical loop antenna, he continued, eliminates the costly and hazardous installation of large dipoles which are placed atop towers on the user's roof to receive television signals sent horizontally polarized from a television broadcasting station.

NOISE FROM DIATHERMY

This antenna, claimed Mr. Grinditch, also largely eliminates interference from diathermy (high-frequency electrical heat treatment) machines which are so extensively used not only by physicians and in hospitals but also in private homes. One such machine, he pointed out, ruins present television reception for miles around, and there are between 30,000 and 40,000 such machines now in use in this country.

With vertical transmission, however, the directional property of the antenna loop under control of the user offers the only practical possibility of eliminating this interference, he stated.

Echoing Philco's stand against the freezing of present television standards and against limited commercial licensing of television broadcasting stations, Mr. Grinditch declared that gross injustice would be done to the public if such action took place.

Philco engineers have demonstrated the company's new developments to members of the Federal Communications Commission.

Westinghouse Boosting Salaries 10% In Feb.

PITTSBURGH — Wages and salaries of all employees of Westinghouse Electric & Mfg. Co. will be adjusted upward 10% from February base rates in accordance with the Westinghouse Wage and Salary Plan, under which the amount of compensation is established each month in proportion to the average earnings of the company in the preceding three months.

Net earnings for the last three months were \$4,379,450; of which \$1,822,117 was earned in November, \$1,598,595 in December, and \$958,738 in January. Last month the adjusted compensation to all Westinghouse employees was 12% above the base rates. Approximately 49,500 employees will receive this month's adjusted compensation.

CLASSIFIED ADVERTISING

RATES: Fifty words or less in 6-point light-face type only, one insertion, \$2.00, additional words, four cents each. Three consecutive insertions \$5.00, additional words ten cents each.

PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Air Conditioning & Refrigeration News, 5229 Cass Ave., Detroit, Mich.

POSITIONS WANTED

U.E.I. GRADUATE in air conditioning wants part time work (mornings) with air conditioning contractor in the Detroit area. Sole object is in acquiring experience in estimating loads, layout work, installation and service. Salary no consideration. Good character references. Box No. 1201, Air Conditioning & Refrigeration News.

SALES EXECUTIVE, in middle forties; wide experience in sales development, operating sales crews, etc.; experienced in utilities and dealer outlets; all types electric and gas (domestic) appliances, commercial refrigeration, unit air conditioning; desires larger opportunity than present location; supervisory capacity or sales promotion work; modest salary; good references. Address Box No. 1203, Air Conditioning & Refrigeration News.

SALES ENGINEER, with 12 years activity commercial refrigeration in U. S., South America, and Europe, with varied experience in preparing estimates, laying out installations, purchasing parts and accessories, selling, with perfect knowledge of Spanish and French wants similar position with manufacturing concern, distributor, or in export, would also travel abroad. Box No. 1204, Air Conditioning & Refrigeration News.

SALES EXECUTIVE having over ten years practical and successful experience with leading manufacturers in appointing, training, and developing dealers and distributors for air conditioning and commercial refrigeration lines, desires to make new connection with responsible manufacturer or distributor. Now living Metropolitan New York area but willing to go anywhere U. S. Box No. 1205, Air Conditioning & Refrigeration News.

DEVELOPMENT AND SALES engineer. Experience in installation, service, development, sales promotion, teaching, and writing. Have some new ideas on refrigeration valves which progressive manufacturer can go far with. Am nationally acquainted with jobbers, service men, and engineers. Age 37, married, University of Michigan Graduate Engineer. Write Geo. H. Clark, 8315 Dixboro Rd., South Lyon, Mich.

POSITIONS AVAILABLE

COMMERCIAL SALES Engineer. We would like to secure the services of an experienced sales engineer to represent us on several well known lines of commercial refrigeration and air conditioning in central Mississippi. Please write P.O. Box 25, Jackson, Miss. giving your past experience. We will answer promptly.

FRANCHISES AVAILABLE

DIRECT FACTORY CONNECTION—Make all the profit yourself by selling refrigerator display cases, walk-in coolers, compressors, to meat markets, grocers. Financing arrangements for time sales. Write for full information, or see EHRLICH REFRIGERATOR MFG. CO., St. Joseph, Mo.

EQUIPMENT WANTED

SPOT CASH paid for surplus refrigeration equipment such as compressors, motors, controls, fittings, copper tubing, shut-off valves, automatic water valves, special tools, etc., and all types complete units. No quantity too large. Send full particulars. W. W. JAMES, 1144 Ward Ave., Bronx, N. Y.

EQUIPMENT FOR SALE

ELECTRIC WATER Coolers—Frigidaire bottle and pressure types, A.C. and D.C.—running condition—"As is"—From \$10.00 to \$39.00. For further details, call or write A. H. HENRY, 4216 13th Street, Long Island City, N. Y.

REPAIR SERVICE

DOMESTIC TYPE thermostatic controls reconditioned like new. Precision work by experts. Years of satisfied customers, among largest in the country. All work guaranteed. Try us and be convinced. The largest thermostatic repair service

in the country. It's your guarantee. Prices on request. UNITED REPAIR CO., INC., 342 W. 70th St., New York City.

GENERAL ELECTRIC DR-1, DR-2 Monitor Top units exchanged \$27.50 F.O.B. our factory. Send your defective unit. On receipt we make immediate shipment of completely rebuilt, refinished unit with one year guarantee. Like new in every respect. Westinghouse and other hermetically sealed units, prices on request. GENERAL REFRIGERATION MAINTENANCE, 220-222 West Huron St., Chicago, Ill.

FRIGIDAIRE Model N condensers repaired or exchanged \$10. Model C \$14. Model W3D \$11. New tubing installed and tested under 300 lbs. pressure. Other makes and models correspondingly low. Only steel jacketed condensers accepted for repair or exchange. Low side boilers and fin coils, repaired, remodeled, silver-

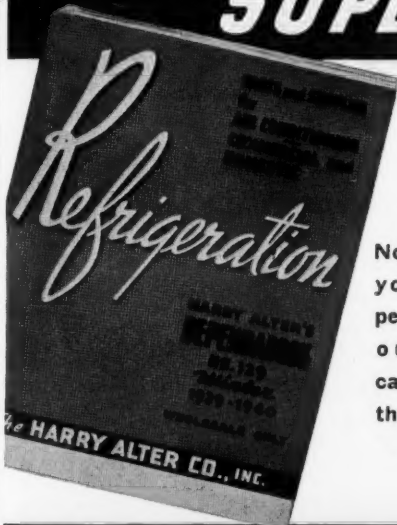
soldered. Frigidaire models 19X, 20X, 21X, and 23X, repaired \$6. STANDARD REFRIGERATION PARTS CO., 4639-41 West Washington Blvd., Chicago, Ill.

CONTROL REPAIR service. Your controls repaired by expert mechanics, with special precision equipment. Supervised by graduate engineers. We stress perfection and dependability before price. One year guarantee on domestic controls. Any bellows operated device repaired. HALELECTRIC LABORATORY, 1793 Lakeview Road, Cleveland, Ohio.

PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

EITHER WAY YOU GET SUPER SERVICE



On Air Conditioning and Refrigeration Supplies and Equipment.

No matter whether you order "in person" or from our complete catalog, you get the same careful, "individual" attention.

12
COMPLETELY STOCKED BRANCHES

THE HARRY ALTER CO.
1728 S. MICHIGAN AVENUE, CHICAGO, ILLINOIS
3 CHICAGO BRANCHES, NORTH, WEST, SOUTH

NEW YORK
BROOKLYN
BRONX
JAMAICA

NEWARK
DETROIT
CLEVELAND
ST. LOUIS

BETTER COMMERCIAL REFRIGERATION DEMANDS AMINCO OIL SEPARATORS WITH AUTOMATIC OIL RETURN

Regardless of the type of evaporator or kind of refrigerant used, oil will invariably trap in some part of the system and start its train of troubles. The function of an efficient oil separator is to keep the lubricating oil in the crankcase where it belongs, preventing trouble due to scored or burned out bearings—oil logged evaporators—oil loaded liquid receivers—gummed-up expansion coils and plugged expansion valves.



AMINCO OIL SEPARATORS perform these duties efficiently and economically, being so constructed that they assist materially in efficient operation of either old or new equipment.

Sizes from 1/4 ton to 120 tons may be used with any refrigerant except ammonia.

AMERICAN INJECTOR COMPANY
1481 FOURTEENTH AVENUE, DETROIT, MICH.

Pacific Coast—Van D. Clothier,
1015 E. 16th, Los Angeles

Export: Borg-Warner International Corp.,
310 S. Michigan Ave., Chicago, Ill.



New IMPERIAL SERVICE VALVE KIT for HERMETIC UNITS

For purging, charging and testing the following units:

Airtemp	Crosley	Gibson	Trukoid
Bohn SO	Frigidaire	Grunow	U.S.R. & Tel.
Bohn CH2Cl	Frigidaire (Late Models)	Majestic	Westinghouse
Cold Spot (to 1934)	General Electric	Servel	(Large Float)
Cold Spot (1935 and later)	General Electric (CG-1-A16)	Spartan	Westinghouse
			(Small Float)

Kit consists of:
1 Valve, with wheel handle, 10 valve adapters, 6 wrenches, packed in steel box.
Also furnished with 2 1/2" or 3" compound retard gauge. Wheel handle and gauge need not be removed when outfit is placed in box.

THE IMPERIAL BRASS MFG. CO., 565 S. Racine Ave., Chicago

IMPERIAL VALVES • FITTINGS • TOOLS • STRAINERS
DEHYDRATORS • CHARGING LINES • FLOATS



ORDER FROM YOUR JOBBER

Will RANCO Type 91 G2 Start a Cold Compressor?

Emphatically—Yes! Because 91 G2 is a Temperature Control and its operation is affected only by fixture air temperature and coil temperature, and not by gas pressure in the system.

This most modern of all controls for Walk-In-Coolers, Refrigerated Display Cases and similar applications, maintains proper fixture air temperature—and assures defrosting of the coil—under all load and weather conditions, without adjustment.

RANCO INC., Columbus, Ohio, U.S.A.



CUT-OUT

CUT-IN



ACME INDUSTRIES, INC.
JACKSON MICHIGAN
AMMONIA FINNED COILS

Tests Prove it's Completely Waterproof.
The New SI Small Capacity
MAGNET VALVE
Alco Valve Co., St. Louis, Mo.

Sells Faster Because It Cools Faster!
IDEAL SPEED COOLER
Ideal Beer Cooler Co.
2953 Easton Ave., St. Louis, Mo.

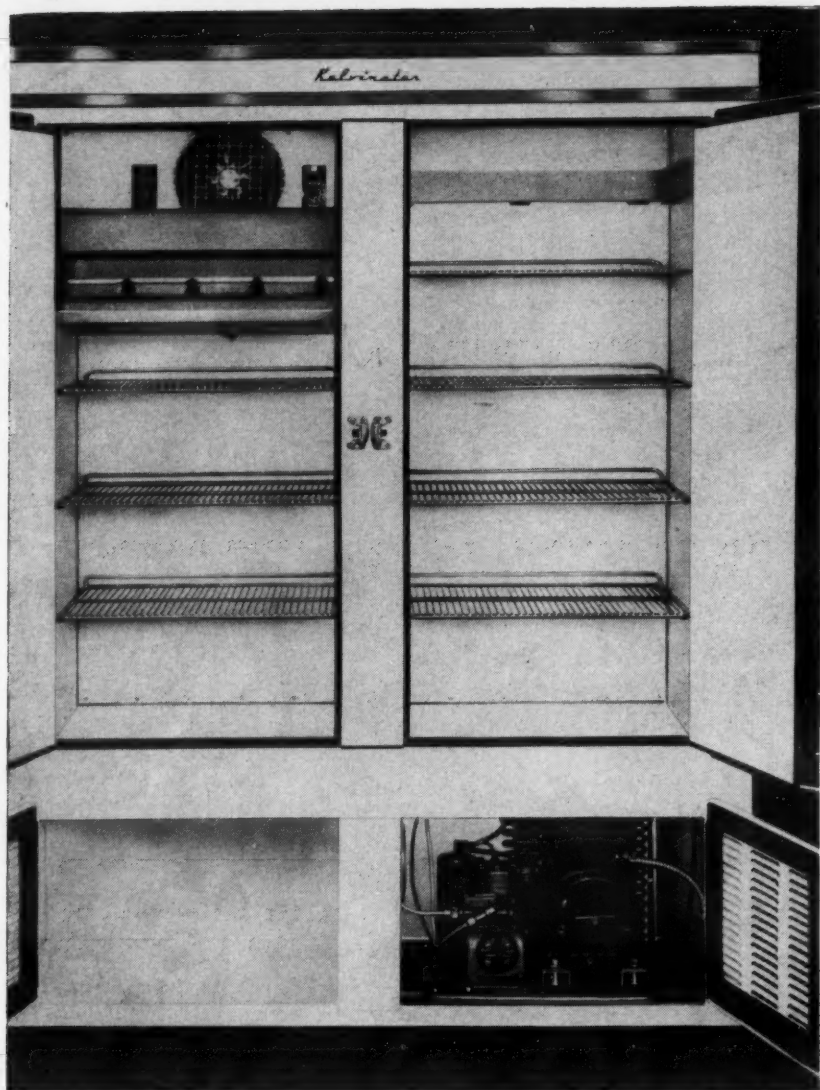
DISPLAY CASES
Write for details of this sensational new 100% PORCELAIN Display Case line.
MIDWEST MFG. COMPANY
Galesburg, Illinois

PENN Leads in AUTOMATIC SWITCHES AND CONTROLS
Write for Catalog
PENN ELECTRIC SWITCH CO.
GOSHEN, INDIANA

For Information on Motors FOR ALL TYPES OF Air Conditioning and Refrigeration Equipment WRITE TO
Wagner Electric Corporation
341 PLYMOUTH AVE. ST. LOUIS MO.

A COMPLETE LINE OF COMMERCIAL REFRIGERATORS AND DISPLAY EQUIPMENT
STAINLESS STEEL
GLOSTER MANUFACTURING CO. ERIE PA.
WRITE FOR OUR NEW CATALOG

All-Purpose Reach-In Box



New line of reach-in refrigerators introduced by Kelvinator consists of three models, all utilizing forced-air circulation. Completely manufactured by Kelvinator, the model shown here is the RI-20, which has an icemaker built in the cooling unit.

Kelvinator Extends Commercial Line

(Concluded from Page 1, Column 3) sagging. Insulation is sealed in Kelvatex, 3% inches in walls, top, and bottom and 3 inches in doors.

An automatic light, controlled by switches that turn it on when either door is opened, illuminates the entire food compartment. A ventilated, unrefrigerated compartment on the left side of the base is easily accessible through a hinged, louvered door. An adjustable temperature selector with "on" and "off" switch for the condensing unit is conveniently located on the cooling unit panel.

The new line of beverage coolers comprises two models—the BC-154, with a capacity of 154 standard 7-ounce bottles and the BC-266, with a capacity of 266 standard 7-ounce bottles. They can be used for either wet or dry cooling of beverages and are completely manufactured by Kelvinator.

Interior of the tub and the exterior of the shell are chemically treated for rust protection and paint adhesion, with the tub completely galvanized. Thick, high-efficiency sealed insulation protects against moisture penetration, and the welded metal pan supports and seals the insulation from the bottom compartment.

Top trim in the new beverage coolers is replaceable. Lids are of the flip-flop type, made of hard rubber with rubber hinges. The smaller model is available in either white or green, and both models are finished in baked Permalux.

Added to Kelvinator's water cooler line is model B-3, a bottle-type cooler 41 1/2 inches high, 18 1/4 inches wide, and 18 1/4 inches deep. This new model has capacity to cool 3 gallons of water from 90 to 50° F. per hour.

Additions to Kelvinator's condensing unit lines include water-cooled models from 1/2 hp. and three new special air-cooled models.

More Than 200 Men Hired By Carrier Since Jan. 1

SYRACUSE, N. Y.—Employment of more than 200 new men by Carrier Corp. since the first of the year was reported by J. I. Lyle, president, as an indication that the demand for air conditioning in large scale industries was maintaining the pace set last year.

The "back to work" movement in the Carrier factories started on Jan. 8, when manufacture of new models was begun, Mr. Lyle said. He stressed the demand for heavy air conditioning machinery, and said that the swing toward large scale installations that started last year was still a favorable part of the air conditioning picture.

Increase in business is expected to result in a 20% jump in sales in 1940 over 1939, he explained. Sales in 1939 gained 12% over 1938. Major jobs acquired by Carrier so far this year include two Rockefeller Center buildings, and the Famous-Barr store.

Anaconda Copper Refrigeration Tubes

Dependable!

THE AMERICAN BRASS CO.
FRENCH SMALL TUBE BRANCH
General Offices: Waterbury, Conn.

Law Introduced By N. Y. Assemblymen Would Regulate Air Conditioning Work

(Concluded from Page 1, Column 4) Known as the "air conditioning law," the bill would not be retroactive and would have no jurisdiction over existing air conditioning systems.

The bill sets forth its purpose as "the safeguarding and guaranteeing of public health, comfort, and convenience." It defines air conditioning as "the simultaneous automatic control of temperature, motion, and humidity, and a reduction in the dust content and odors of air employed in the ventilating of buildings."

A five-man state board would be created under the bill, having the power to "make, amend, and repeal rules and regulations in respect to the construction, installation, alteration, maintenance, or repair of air conditioning systems, and . . . to hear and determine appeals from decisions of the local boards."

MAKEUP OF BOARD

The state board would be made up of one sheet metal employee, one sheet metal employer, one employee steamfitter, one employer steamfitter, and one registered mechanical engineer, to be chosen from a panel of five selected by the American Society of Heating & Ventilating Engineers.

Provisions of the bill call for the creation of local five-man boards, "in every city in New York state." These boards, to be made up of two sheet metal men, two steamfitters, and one mechanical engineer, would "have power to administer the rules

and regulations laid down by the state board, and to issue certificates of competency to contractors."

OH YES—THE FEES

All contractors operating in the air conditioning business in New York state would be required to secure a "certificate of competency," under the terms of the bill. These certificates, which require the payment of an original fee of \$25 and a yearly renewal fee of \$10, would be issued to those contractors "who have been pronounced qualified by a local board to engage in the business of air conditioning."

The bill provides that "any local board may cancel, revoke, or suspend a certificate of competency of any person if the workmanship in any air conditioning system . . . be such as to endanger the life, health, comfort, convenience, or property of others."

An appeal from the ruling of the local board may be taken to the state board. Any decision of the state board may be reviewed by certiorari to the supreme court of the state.

INSPECTORS SUGGESTED

Provision is made in the bill for inspectors, whose compensation is fixed by the state board. These inspectors shall be licensed professional engineers, qualified to practice in heating, ventilating, and air conditioning. "Inspectors shall qualify

through civil service examinations and shall be appointed on merit only."

Duty of the inspectors "shall be to inspect the construction, installation, alteration, maintenance, or repair of air conditioning systems, and to report in writing the results of such inspection to their respective boards."

When violations of rules established by the state board are found, the bill provides that "written notices of violations shall be served personally or shall be served by mail upon the contractor."

WRITTEN PERMISSION

Before work is started on any air conditioning contract, the owner or the contractor who holds a certificate of competency "shall make written application to, and secure . . . a permit from the local board. The application for such permit shall describe the proposed construction and give the name and business address of the air conditioning contractor."

When the work is finished "the inspector shall recommend, and the board shall issue, . . . a certificate of inspection and approval."

Violations of the "regulations and rules" established by the state board and administered by the local boards, call for a fine of \$250 or imprisonment of not more than three months.

Salaries established by the bill are \$25 per day for members of the state board and \$15 per day for members of local boards in each city.

Crum With Graybar

DALLAS, Tex.—Gil Crum has been appointed city salesman for Graybar Electric Co. here.

DEPENDABLE REFRIGERATION



Controlled



... In a Vacationer's Paradise

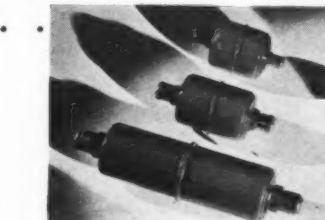
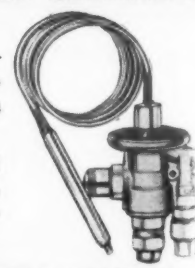
depended upon for steady, accurate control on any kind of Refrigeration or Air Conditioning System. . . . A-P Valve DEPENDABILITY is so well proven that the thought of a substitute is impossible.

New A-P TRAP-IT . . .

Traps all impurities such as scale, gummy deposits, solder particles, and MOISTURE. Improves the action of any Expansion or Solenoid Valve—and the efficiency of the entire System. Has many times the filtering and absorbing area of any ordinary strainer or filter. Install a "TRAP-IT" with each of YOUR Valves.

A-P No. 205-C — 1/2 H. P. Thermo-static Expansion Valve

Easy to inspect and clean. Leakproof, brass-forged body. Diaphragm type.



In stock at progressive jobbers everywhere. Recommended by progressive Service Men.

AUTOMATIC PRODUCTS COMPANY
3450 NORTH THIRTY-SECOND STREET
MILWAUKEE WISCONSIN
Export Department—100 Varick St., New York City

SERVEL COMMERCIAL REFRIGERATING MACHINES

Whether your requirements are large or small, standard or special, Servel engineers can help you solve your most vexing problems of commercial refrigeration or air conditioning. Write today to Servel, Inc., Electric Refrigeration and Air Conditioning Division, Evansville, Ind.

